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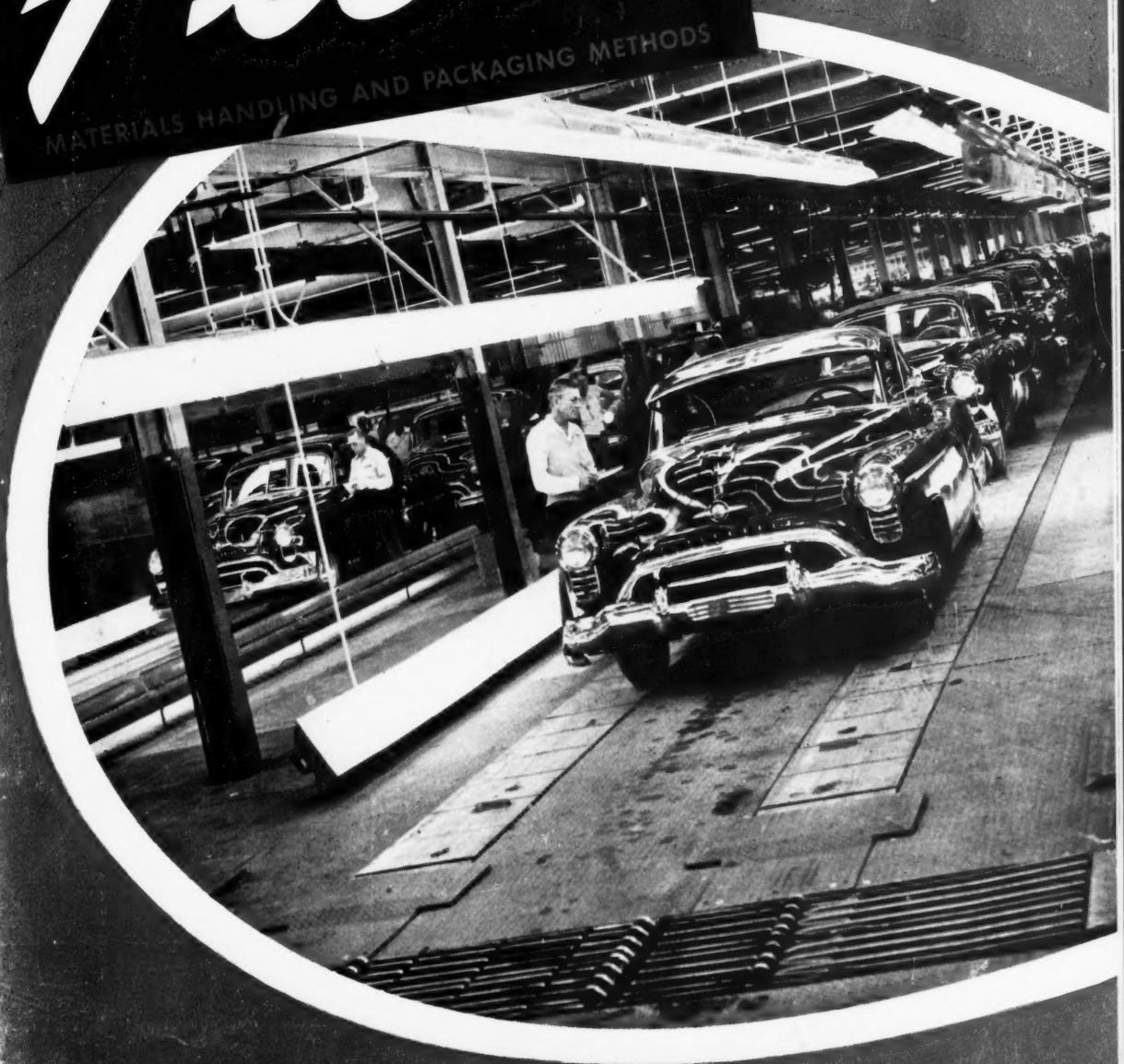
MATERIALS HANDLING AND PACKAGING METHODS

OCTOBER, 1950



IN THIS ISSUE

The High Cost of Lifting — 2-Way Radio Triples Truck Load Hours — Elevator Opens Bottleneck — Oldsmobile's Parallel and Cross Transfer Conveyors

R v.6 Oct. 1950 - Sept. 1951

EASY TO READ STENCILS

Three size machines cut ½", ¾", 1" stencils.

Does the busy freight handler spot your goods immediately... send them safely, speedily, on their way to your customer?

Or does he slow up your deliveries trying to decipher illegible hand-lettering, poorly typed labels, tags... other inefficient methods of marking?

Only STENCILS give you bold, easy-to-read addresses—the kind recommended by the railroads and trucking lines.

Association of American Railroads says, "*STENCILS contribute very materially to prompt and correct deliveries.*" American Trucking Association says, "*A shipment properly stenciled is off to a good start on its journey to destination.*"

Only the MARSH Stencil Machine gives you the Word Space Button, Hardened Dies and Quick Replaceable Punches, Streamlined Hood, Sealed-In Lubrication and other superior features.

Send your orders to nearest Marsh Dealer. Stocks in all principal cities. Or write for free Handbook.

MODEL H CUTS ½" STENCILS

$169

MODEL S CUTS ¾".... $169.00

MODEL R CUTS 1"..... [illegible]

F.O.B. Belleville, Illinois. [illegible] added when delivered from dealer's stock.

MARSH K-1 BLACK STENCIL INK

No shaking needed. Blacker marks... weatherproof... fast drying. Write for FREE pint sample.

MARSH FOUNTAIN BRUSH

"Push Button" finger-tip control assures neat, attractive marking on shipments.

MARSH OIL BOARD

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MARSH STENCIL MACHINE CO., 25 MARSH BLDG., BELLEVILLE, ILL., U.S.A.

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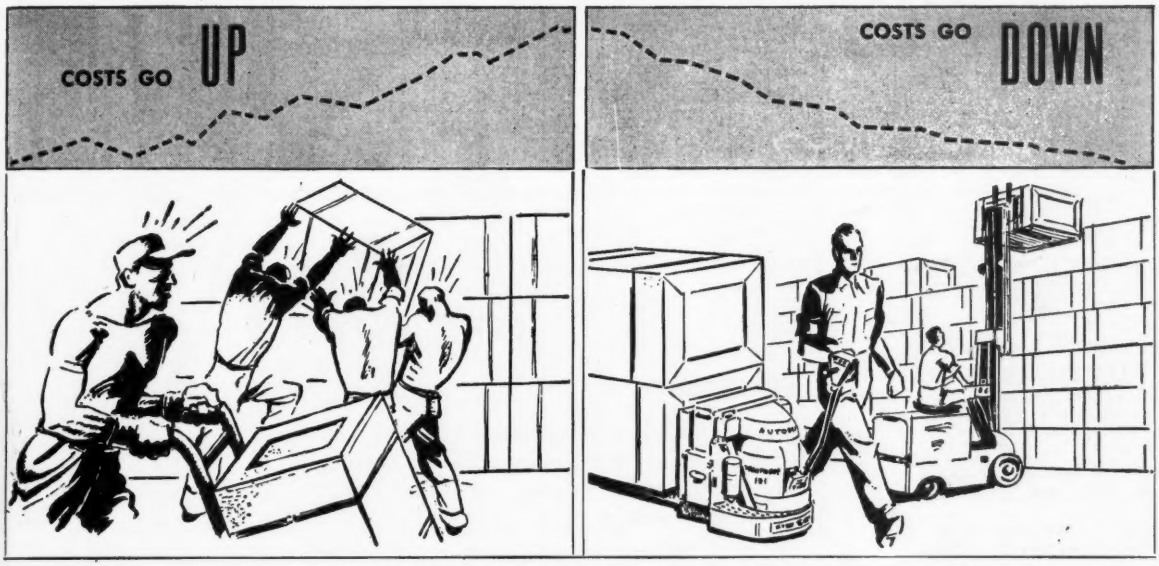
Teen.

What is the cost of handling your material *MANUALLY?*



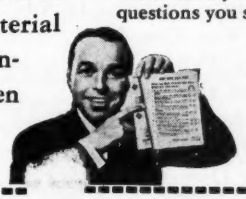
Deduct 50% or more and you'll have the cost of handling with AUTOMATIC Electric TRUCKS!

Worth consideration. isn't it? Imagine what a saving like that could do to make your profit figure look better, your cost structure more in line with what it should be!

These amazing electric trucks lift, move and stack your material ceiling-high with easy, finger-tip control...hundreds of pounds, or tons and tons. One operator handles more material than three workers could by antiquated manual handling methods, releasing two men for more productive, profitable work.

Investigate the Automatic Electric Truck Way to cut handling costs, and you'll find they are *not* a capital expenditure, but a money-saving, cost-cutting bonus every time you handle material. Mail coupon for the money-saving facts.

FREE—Material Handling CHECK CHART and Catalog.
Let us send you this money-saver Check Chart of 8 important questions you should ask about your company's material handling. If you answer "NO" to more than 4, you should investigate how Automatic Electric Trucks can cut your handling costs 50% to 75%. With it, you get a free Booklet-Catalog, "How to Make Your Material Handling Pay Dividends!" Mail coupon!



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"101" Transporter — A Product of Automatic — Lightens Life's Loads

ADE **Automatic** MARK

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Please send me complete facts on money-saving Automatic Electric Trucks without obligation, and FREE CHECK CHART with Catalog.

Company.....

By.....*Position*.....

Street Address.....

City.....*Zone*.....*State*.....

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Flow

THE COVER PHOTO shows one of the transfer points in Oldsmobile's split-second timed parallel and cross transfer conveyor system. Story on page 49.

FLOW is not the official publication of any group, society or other special interest: its editorial pages are unbiased and undominated.

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OCTOBER, 1950

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All communications should be addressed to FLOW Magazine, 1240 Ontario Street, Cleveland 13, Ohio.

Publisher and Editor
WILLIAM S. WHEELER

Managing Editor
HENRY F. EATON

Associate Editor
GORDON BOWMAN

•

Art Director
JOHN DIX

Roving Photographer
MICKEY PALLAS

Field Correspondents
W. J. DERNBERGER, Detroit
JOHN QUINN, Kansas City
C. LEE DRYDEN, Milwaukee

FLOW EDITORIAL AND BUSINESS OFFICES—

CLEVELAND OFFICE
DAVE SAWYER
1240 Ontario Street
Cleveland 13, Ohio
Phone Superior 1-9622

NEW YORK OFFICE—
ROBERT MACBETH
60 E. 42nd St.
New York 17, New York
Murray Hill 7-3420

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FASTER! *from forward to reverse* ***IT DOES MORE WORK!***

EASIER! *to operate than your car* ***IT DOES MORE WORK!***

BETTER! *neutral tests prove* ***IT DOES MORE WORK!***

Here's a combination destined to make Materials Handling history—

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This combination of CARLOADER* and DYNATORK* DRIVE constitutes a forward step of enormous significance to the science of Materials Handling. You'll want to know all about it. A Clark bulletin will bring you the facts in convenient form. Write for it . . . or simply fill in the coupon and mail it.

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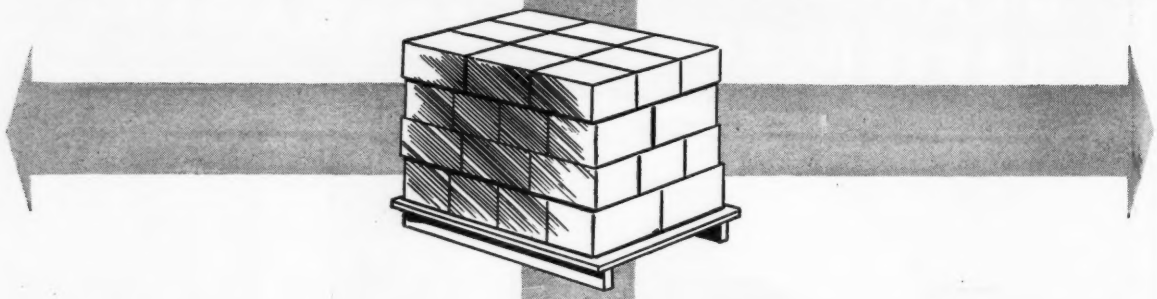
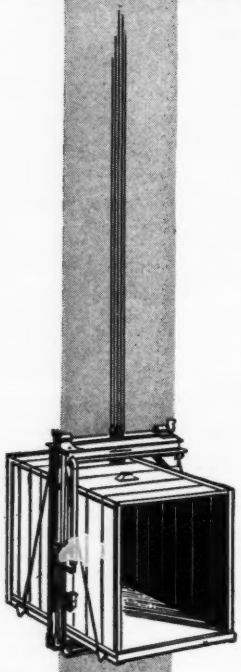
Crossroads of Efficient Materials Handling



WHERE THE HORIZONTAL INTERSECTS THE VERTICAL

In your materials handling operation there is a point where you may be losing money and valuable time.

This point is the place in your handling system where the horizontal elements (hand and power trucks, conveyor belts, etc.) intersect the vertical member of the team, your freight elevators. Unless your freight elevators are a planned part of your overall materials handling operation, the efficient flow of supplies and products is delayed . . . and your handling costs rise.



To help you plan your vertical transportation for peak efficiency, Westinghouse offers "The Buyers Guide for Freight Elevators," B-4402. This is the most complete source of vital information available on the proper selection and application of freight elevators. Write on your letterhead to Elevator Division, Westinghouse Electric Corp., Dept. L, Jersey City, N.J.

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YOU CAN BE SURE...IF IT'S

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J-98581

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with

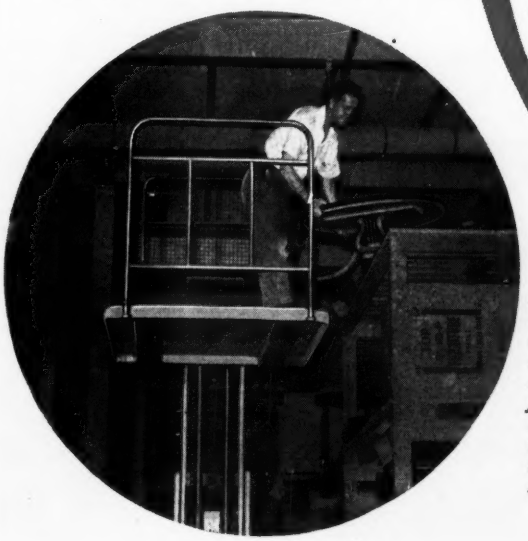
ELWELL-PARKERS

Cuts Costs, Speeds Work

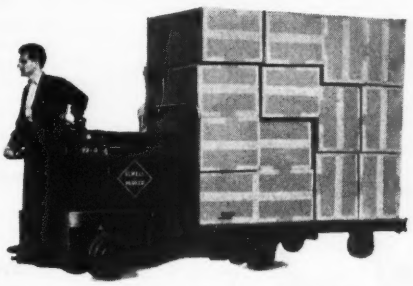
E-P fork truck tiers master loads compactly, utilizing all space up to 14 feet.

At its world's largest one story warehouse, L. Bamberger & Co. achieves *fully mechanized* handling of materials—mechanization that would have been considered impractical a few years ago. Elwell-Parker power trucks play an important role, providing fast, dependable service. With the use of E-P trucks and the unit load principle, Bamberger's volume handled per man-hour has increased over prior operations. There is less physical exertion, greater safety for men and goods. Also reliable, low-cost E-P *electric* power proves ideal because it is quiet, fume-free, and less hazardous.

For complete details on this ultra-modern warehousing job, write for E-P Reporter No. 9. The Elwell-Parker Electric Company, 4238 St. Clair Avenue, Cleveland 3, Ohio.



Same Elwell-Parker has remote control switch so operator can use fork (with safety steel platform) as elevator. He stores lighter merchandise. This method saves aisle space.



Typical live skid load. On short runs, it is carried by an Elwell-Parker as shown. On trips over 200 feet, skids are coupled into 4-unit train and towed by truck.

ELWELL-PARKER

POWER INDUSTRIAL TRUCKS

Established 1893

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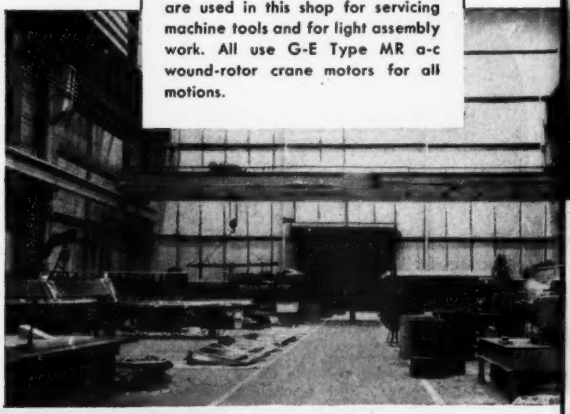
Spotting loads—150 tons or 50 lbs. a job for cranes...

Moving and positioning gigantic pieces like this 150-ton welded frame is a familiar sight at this large factory. Two G-E equipped cranes—a 100-ton and a 200-ton—go into action as the crane follower signals to raise the load.

Worker easily controls this general purpose, pendant push-button operated, machine-shop crane. Several are used in this shop for servicing machine tools and for light assembly work. All use G-E Type MR a-c wound-rotor crane motors for all motions.



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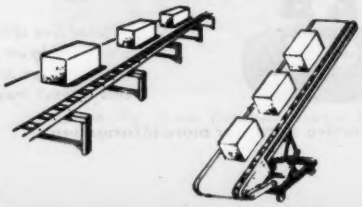
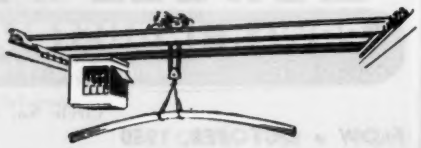
Everything electrical for MATERIALS HANDLING

CONVEYOR DRIVES



CRANE DRIVES



POWERED by G.E.

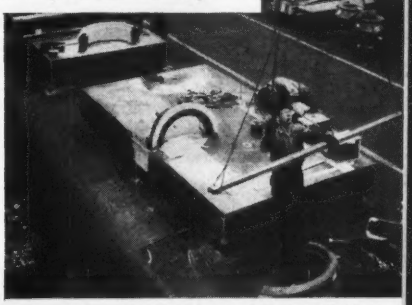
G-E crane-drive equipment gives safe, positive control for all operations from accurate spotting to high-speed lowering. By specifying General Electric equipment you gain the benefits of 40 years' experience in crane electrification. G-E engineers work closely with crane manufacturers in all stages from design to production engineering. See your local classified 'phone directory for a listing of the nearest G-E office. *Apparatus Department, General Electric Company, Schenectady 5, N. Y.*

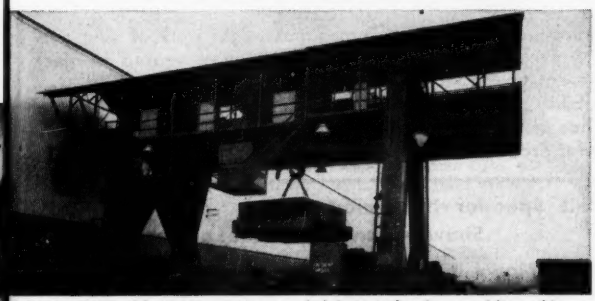
Worker moves a piece of bar stock with the help of a push-button operated industrial hoist. Over 100 of these electrically operated "jib cranes" are used in this plant. These handy installations, equipped with G-E motors, are paying for themselves in speed and efficiency.

SEE the latest techniques and equipment in this new film

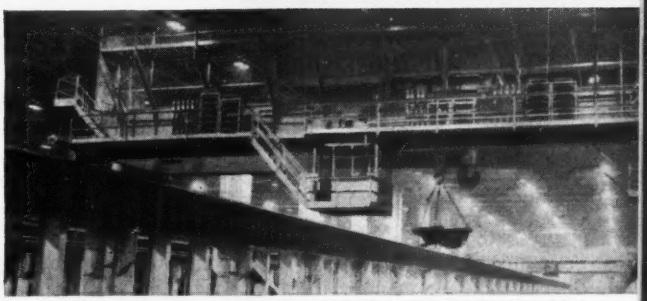
As a service to industry, General Electric has produced an unbiased, authoritative movie* covering in detail the latest techniques and equipment in materials handling. Your equipment supplier or G-E representative will make this film available to you and your staff—*without cost or obligation.*

**Part of G.E.'s MORE POWER TO AMERICA program; film is titled "Materials Handling—In Receiving, Warehousing and Shipping."*





Designed to lift large castings and fabricated sub-assemblies, this 100-ton outdoor gantry is driven by General Electric MD-600 crane motors. Known as the "toughest G-E crane motors ever built," they offer increased overload capacity and greater stability.



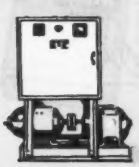
100-ton heavy-duty crane with main and auxiliary hooks shown lifting a small casting. The G-E magnetic hoist control on the bridge provides dynamic braking, automatic acceleration and deceleration and correct kick-off torque without cycling, overshooting, or downward drift.

GENERAL ELECTRIC

668-80

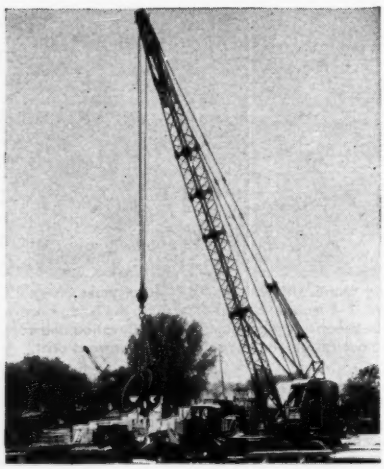
HOIST DRIVES

INDUSTRIAL TRUCK DRIVES & BATTERY CHARGERS



there's a LINK-BELT SPEEDER truck-mounted Shovel-Crane for *YOUR* materials handling job . . .

. . . highly maneuverable in close quarters— travels fast to scattered jobs . . .



Link-Belt Speeder truck-mounted Shovel-Cranes make light work of your materials handling . . . give fast, trouble-free service. They're geared to meet exacting schedules—cut your handling costs to the bone.

Designed for flexibility . . . attachments are quickly interchangeable to provide shovel, trench hoe or clamshell bucket for any specific type of operation. A smart investment for profit-wise operators.

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Mail the coupon for full details at no obligation. A SIMILAR PROGRAM IS NOW READY FOR MANUFACTURERS OF INDUSTRIAL HAULING EQUIPMENT

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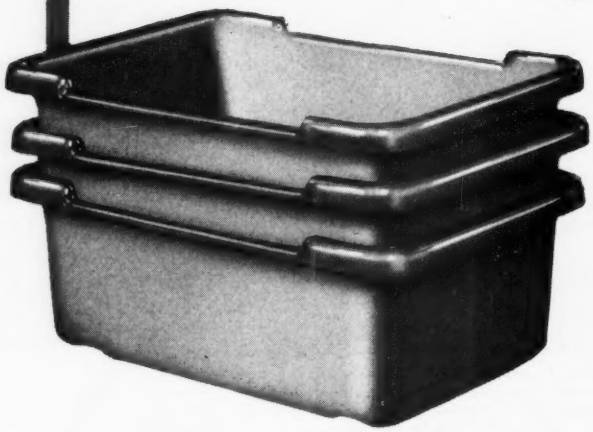

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THE **ENDURANCE** OF A CAMEL

THE **STRENGTH** OF AN ELEPHANT

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- Adjustable boom—5 positions.
- Trunnion steering, maximum maneuverability.
- Speeds up to 10 mph in either direction.
- 10,000 lbs. hoisting and transporting capacity.

HYSTER KARRY KRANE is a terrific cost-cutter in lifting and moving heavy or bulky materials up to 10,000 pounds in weight.

This mobile crane works on pneumatic tires, with standard automotive controls. Does anything (within its capacity) that any overhead or stationary crane or hoist can do. Goes anyplace to do its work—over rough or smooth roads—indoors or outdoors. Great tool for loading and unloading gondolas, flat cars, trucks and vans; for factory and yard materials handling operations.

Typical users include—Automobile factories—Contracting and general construction firms—Heavy machinery distributors—Factories—Food manufacturers—Foundries—Mining—Motor freight lines—Public utilities—Railroads—Warehouse and storage firms—and many other industries where the lifting and transporting of heavy loads is of prime importance.

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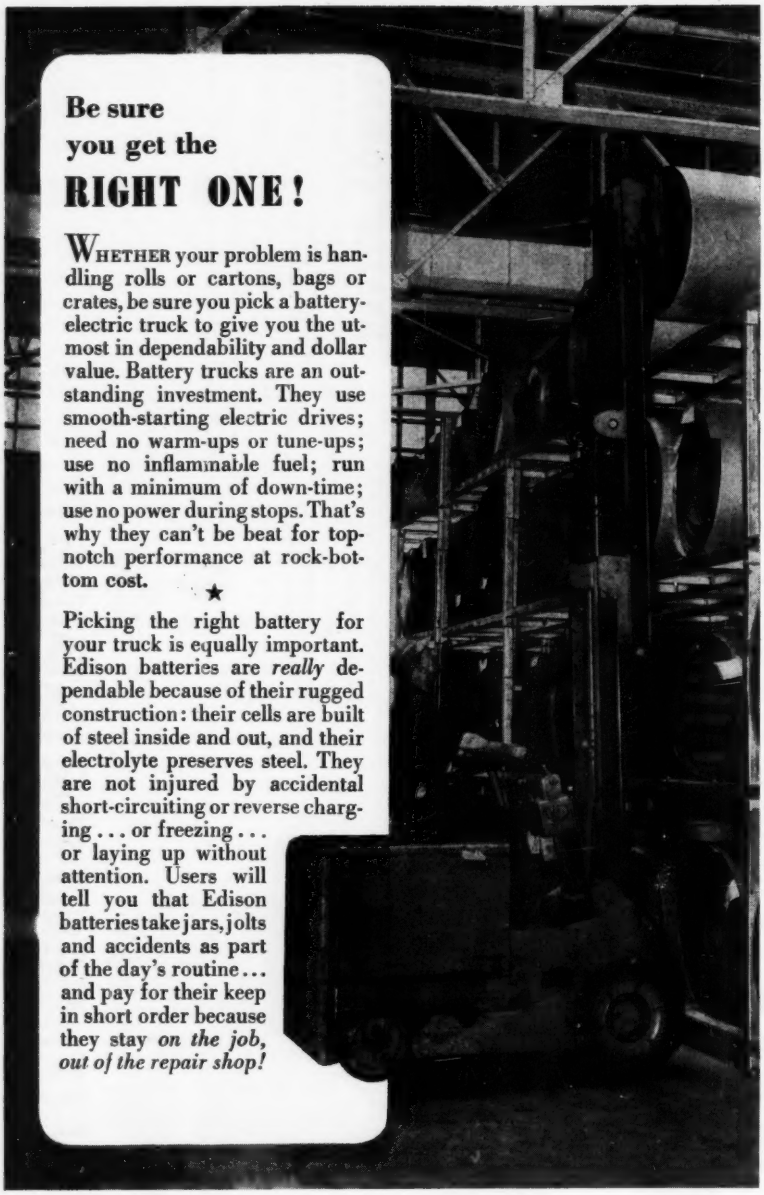

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STORAGE BATTERIES

Typical Truck Battery

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To FLOW:

Device For Newsprint

Enclosed is a letter which we are asking you to forward to Tom H. Bartel, author of the article appearing on pages 36 and 37 of the August issue. We always enjoy reading FLOW.—A. F. Gluck, Minerva Wax Paper Co., Minerva, Ohio.

Author Bartel is co-inventor of the hydraulically operated clamping device which lifts and tiers rolls of newsprint, one or two at a time, without a load-supporting platform. Warehouse space is thus gained for more storage.—Ed.

To FLOW:

Wants Equipment Source

Can you direct us to a source of overhead towlines which drag four-wheel trucks on a warehouse floor? In assembling merchandise on our floor, we use four-wheelers which our men push around. We are now working on a proposition of using a drag line, to which the full four-wheeler is attached and sent to the shipping dock, while the operator goes ahead and starts assembling another order.—S. W. Epstein, Golden Dawn Foods, Sharon, Pa.

Reader Epstein's inquiry is indicative of the growing realization among wholesalers, of all types, that they "sell nothing but handling" since their operations do not change the nature of the products. The lower the handling cost, therefore, the stronger the competitive position. Engineered material flow is the answer.—Ed.

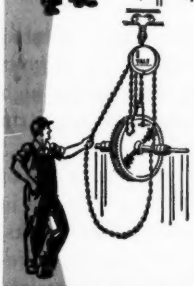
A REVELATION
in hand hoist performance
YALE LOAD KING

EASY to move around

Portable. ½-ton model weighs only 37 lbs.! High strength aluminum alloy castings and alloy steels, fewer parts—all are combined to provide the compact "carry-around" lightness of the Load King in all capacities.

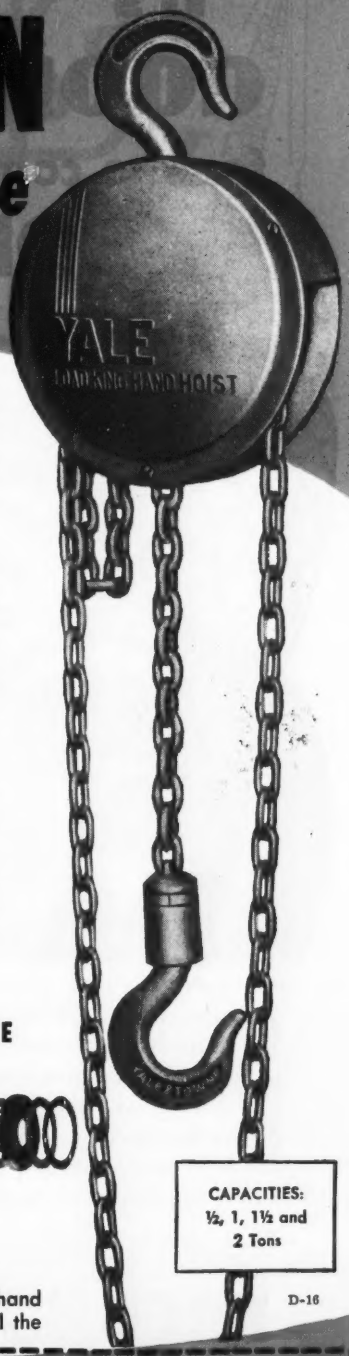
FAST in lifting action

Up to 95% efficiency! It takes this hoist a mere 20 seconds to lift 1,000 lbs. 3 feet. Only 60 seconds to hoist 4,000 lbs. 2.1 feet. *All* rotating shafts are ball bearing equipped, parts are precision machined, and the powerful, revolutionary new Synchro-matic load brake acts quick as a wink.



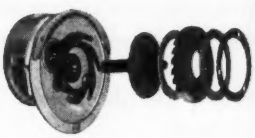
SAVES back-breaking work

Hand pull force necessary to lift the load is maintained at minimum by the high efficiency of this hoist. ½-ton or 2-ton capacity—the Load King is a one-man hoist. Easy lifting keeps operators "in trim" all day. Production hikes, costs go down.



NO OTHER HOIST HAS THIS SYNCHRO-MATIC LOAD BRAKE

Employs a new, improved principle of instantaneous brake action—maximum braking power, automatically! 6-tooth pawl engages 24-tooth ratchet at 6 points simultaneously with balanced and cushioned spring pressure . . . no side pressure on bearing surfaces . . . longer pawl life. Stabilizer ring gives a soft, even, lighter hand chain pull—speeds brake release for precise inching when lowering.



CAPACITIES:
½, 1, 1½ and
2 Tons

D-16

BEFORE YOU BUY ANOTHER HOIST

Investigate fully every feature that makes the Load King your best hand hoist investment. Get all the facts from your Yale distributor or mail the coupon to hoist headquarters. You'll be convinced! So act now!

CALL YOUR YALE DISTRIBUTOR TODAY OR MAIL THE COUPON FOR DETAILS

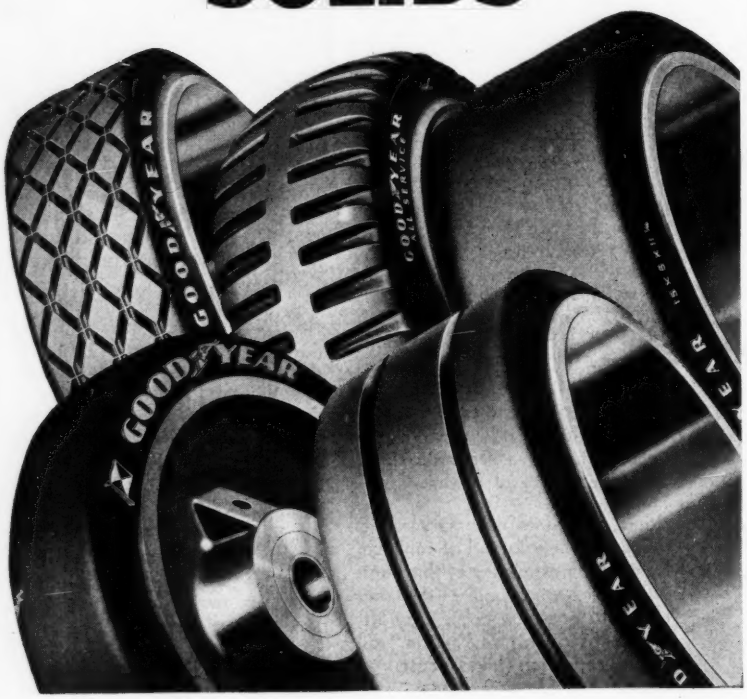
The Yale & Towne Manufacturing Company
Department P-31
Roosevelt Boulevard and Haldeman Avenue
Philadelphia 15, Pa.

☐ Send me Load King Bulletin P-1254.
☐ Give me the name of the nearby Yale distributor.

Name.....
Company.....
Address.....
City and Zone.....State.....

Circle No. 11 on Reader Service Card for more information

It's GOODYEAR for the complete line of SOLIDS



CHOOSING the *right* tire for your job is as easy as saying "Goodyear." Because Goodyear builds a *complete* line of solid industrial tires. *Complete* as to tread designs, giving you all the advantages of custom-built tires at mass-production prices. *Complete* as to sizes and types, insuring the right tire for your particular needs. And that means longer tire life, lower costs.

Yes, it *pays* to buy and specify Goodyear Industrial Tires!

FREE TECHNICAL ENGINEERING ADVICE AND SERVICE

To help solve your industrial tire problems, Goodyear maintains a staff of technical experts. Write: Industrial Tire Division, Akron 16, Ohio.

GOODYEAR

INDUSTRIAL TIRES

All-Weather, Xtra Cushion—T. M.'s The Goodyear Tire & Rubber Company, Akron, Ohio

Circle No. 12 on Reader Service Card for more information

To FLOW:

Data For Argentina

The FLOW article, It's In The Bag, in the July, 1949, issue was drawn to our attention. We would appreciate a copy for our information. The Portland Cement Institute is an organization to promote the uses of this product. It has a public technical library and laboratory.—Dr. Abilio Bassets, Librarian, Institute Del Cemento Portland Argentino, Buenos Aires.

"It's In The Bag" covered in considerable detail a cement bagging and shipping operation, with special attention given to factors of plant layout, flow planning, and the best containers for the job.—Ed.

To FLOW:

Cleaning By Sound

We were particularly interested in the article on page 75 of y[illegible] June, 1950 issue concerning [illegible] frequency sounds used to st[illegible] grease from metal.

Our particular problem is one of cleaning metal surfaces that are in contact with meats. Our trucks, pans and forms, etc., require careful handling. We would appreciate any further information you may have regarding the industrial use of this suggested cleanup method.—D. Z. Decker, Planning & Methods Dept., Wilson & Co., Inc., Chicago.

To FLOW:

For University Instruction

This is an inquiry to ascertain what information in the form of books, charts, or data sheets that you have available on materials handling which would be of use to us in teaching a course in plant layout. Would you please send us a list of such materials which could be purchased by our school or otherwise made available to us.—

K. H. Moltrecht, Instructor, Department of Mechanical Engineering, University of Washington, Seattle.

A number of FLOW DIRECTORIES OF MATERIAL HANDLING EQUIPMENT, MACHINERY AND ACCESSORIES are serving as key reference books in universities and colleges around the country.—Ed.

To FLOW:

A Periodic Request

We are faced with a material handling problem in our new warehouse. Will you please send us by return air mail the name of a first rate material handling consultant. —Bailey Nieder, Assistant to General Manager, Columbia Breweries Inc.

The periodic nature of these requests indicates that commercial and industrial companies are taking their material handling seriously.—Ed.

To FLOW:

Coffee Handling

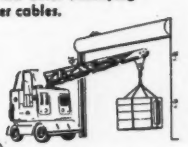
I would appreciate it very much if you would forward to me any articles which you have published relating to handling bulk or bag coffee. A local coffee wholesaler is building a new warehouse here and has asked us for some help.—Robert G. Arnold, Arnold Machinery Co., Inc., Salt Lake City, Utah.

Reader Arnold received references to two FLOW articles on the subject (May 1946 and June 1947), which considered the same subject from the viewpoint of entirely different operating requirements. These were "Well Blended Handling" and "You Don't Have To Be Big".—Ed.

COLES

*15 ton Coles conveying power cables.

THE NAME THAT CARRIES WEIGHT IN MATERIAL HANDLING!



*LOW HEADROOM from yard into plant.

FROM 1¾ TO 23 TON

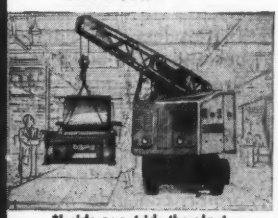
*Handling Railroad Supplies

● PERFORMING a variety of lifting and conveying operations with precision—there's giant-strength and unrivalled maneuverability in every COLES CRANE. 100% concentration on operation is possible as a result of grouped finger-tip controls.

● When you consider ALL AROUND SAFETY, LOW INITIAL INVESTMENT, LOW OPERATION COST, REDUCED MAINTENANCE COST, MINIMUM YARD SPACE... Plus many other advantages—it is no wonder why COLES Mobile Cranes are the first choice among leaders all over the world.

*Working with magnet close to pile.

● Auxiliary attachments such as Grab-hooks, Magnet, and Clam Shovel increase the scope of usefulness of every Coles Crane.



*Inside or outside the plant. Assembly.

Visit Our Booth No. 1110
National Metal Exposition
Chicago, October 23-27
Amphitheater

COLES CRANES, INC.
4307 South Paulina St.
Chicago 9, Ill.

COLES CRANES

Symbol of the Finest Material Handling Equipment

Circle No. 13 on Reader Service Card for more information

makes man-hours

3 TO 4 TIMES MORE PRODUCTIVE

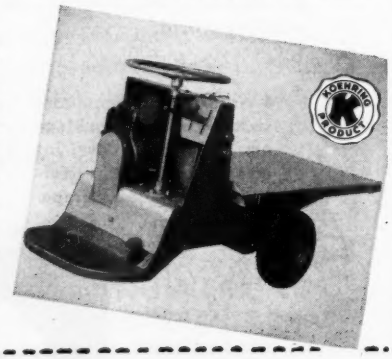
New Kwik-Mix Moto-Bug, with big, 10-cu. ft. capacity hopper, hauls 4 times as much material per trip as an ordinary hand wheelbarrow . . . averages more trips per hour because power does *all* the hard work.

Operator has full power, forward *and reverse* for traveling, spotting and backing up. No pushing, *no pulling*. Drives 1½ to 4 m.p.h. in *both* directions, easily takes full load up 20% ramps.

There's less operator fatigue, too, because Moto-Bug has easy, positive steer. Large steering wheel, with 3.6 to 1 gear ratio, provides handling ease. Clutch, brake, throttle levers are conveniently grouped . . . riding step is available, so operator can ride while he works, take it easy, get more work done.

Hopper body is quickly interchangeable with 4-ft. flat-bed platform for carrying loads up to 1200 lbs. Platform has stake pockets for sideboards . . . tilts for easy pull-away when unloading.

Engine is *standard-make* . . . 4 h.p., 4-cycle gas. All parts are readily accessible. That means less maintenance time, more work-time. It will pay you to see how Moto-Bug can make your man-hours 3 to 4 times more productive. Contact your Kwik-Mix distributor of write to us direct.



Mail today KM27 REV. FL

to: KWIK-MIX COMPANY, Port Washington, Wis.

Send us bulletin, prices on Moto-Bug with: ☐ 10 cu. ft. hopper ☐ 1200 lb. flat-bed ☐ fork lift

NAME _____ TITLE _____

COMPANY _____ DEPT. OR DIV. _____

STREET _____

CITY _____ STATE _____

KWIK-MIX COMPANY PORT WASHINGTON, WIS. (Koehring Subsidiary)

Circle No. 14 on Reader Service Card for more information

LITERATURE
featured in ads

Donaldson Co., Inc. Just-published Donaldson literature gives the complete story on its tier trucks. Donaldson is looking for inquires from distributors interested in handling its line, too.
Circle No. 15 on Reader Service Card

Euclid Crane & Hoist Co. This manufacturer invites you to send for latest catalogues showing how you can put its cranes and other handling equipment to work in your plant to solve your tough handling problems.
Circle No. 16 on Reader Service Card

Wm. Christensen Co., Inc. More efficient car and truck loading using their Easyload transfer plate is the promise Christensen makes in newest catalogues. Complete specs are shown on all sizes of plates.
Circle No. 17 on Reader Service Card

Anchor Steel & Conveyor Co. Anchor invites you to see what's new in conveyors, as presented in its latest booklet. Pictures and drawings illustrate over 50 different types of and designs of Anchor Conveyor systems.
Circle No. 18 on Reader Service Card

Harnischfeger Corp. The Trav-Lift story is told with photos and drawings in Harnischfeger's new catalog of Trav-Lift cranes for "thru-the-air" handling.
Circle No. 19 on Reader Service Card

Richards-Wilcox Mfg. Co. All the facts about R-W Zig Zag Conveyors, the continuous power conveyors specifically designed to carry light loads through confined areas, are available in literature offered by this advertiser.
Circle No. 20 on Reader Service Card

American Sales Engineers. The new catalog released by American Sales contains the complete specs on their selection of prefabricated pallet and skid racks for plants, warehouses, stores.
Circle No. 21 on Reader Service Card

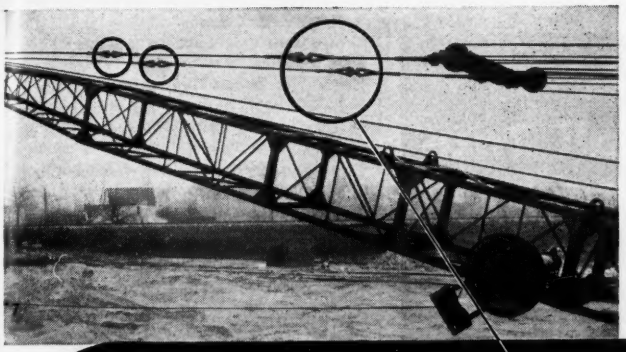
Reuland Electric Co. How Reuland's Fluid Shaft motors have helped other plants solve power problems for heavy loads is told in its new case history file and engineeriing folder, free for the asking.
Circle No. 22 on Reader Service Card

Alvey-Ferguson Co. Can an A-F conveying system do things for your production rates? Alvey-Ferguson thinks so, wants to tell you about it in their latest booklets on A-F engineered conveying systems.
Circle No. 23 on Reader Service Card

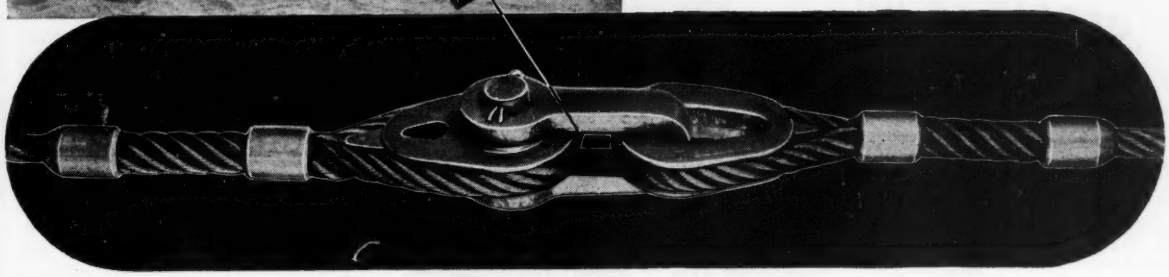
Edison Storage Battery Div. Booklet SB 2039 offered by Edison contains the complete line of Edison storage batteries for industrial trucks, and a current price quotation.
Circle No. 26 on Reader Service Card

Barrett-Cravens Co. Shopping for lift-trucks? Barrett-Cravens has put together a colorful new catalog that shows what it has to offer in the way of trucks and skids, too.
Circle No. 27 on Reader Service Card

Conveyor Specialty Co., Inc. The Unitable portable belt conveyor can be used with surprising flexibility in a raft of conveyor applications. Read all



DUALOC BOOM CABLES



ONLY the New DUALOC gives you these

4 IMPORTANT ADVANTAGES—

1 PREVENTS FATIGUE FAILURES. Complete flexibility with Double Hinging action. No place for hidden and unexpected failures to happen from vibration.

2 COMPLETE, ACCURATE INSPECTABILITY. No wrappings, tapings or solderings. Completely open for inspection at any time. You can always know the exact condition of your Boom Cables.

3 COMPLETE ADAPTABILITY. Endings have same dimensions as zinced sockets—can be installed without alteration to present equipment.

4 NO LOWERING OF WIRE ROPE STRENGTH. Strength in all parts equal to full catalog strength of the wire rope. You have all the advantages of these assemblies with full assurance of all the strength built into your equipment by the manufacturer.

DUALOC Boom Cables are ACCO-Registered. This is assurance of highest quality workmanship combined with top quality material—Preformed Green Strand Improved Plow Steel Wire Rope.

Write for this folder which gives more detailed information

GREEN CROSS FOR SAFETY — MEMBER THE NATIONAL SAFETY COUNCIL

ACCO

Wilkes-Barre, Pa., Chicago, Denver, Houston, Los Angeles, New York, Philadelphia, Pittsburgh, San Francisco, Bridgeport, Conn.

AMERICAN CHAIN & CABLE
WIRE ROPE SLING DEPARTMENT

TRADE MARK

In Business for Your Safety

DUALOC BOOM CABLE ASSEMBLIES

Circle No. 62 on Reader Service Card for more information

DETROIT PUBLIC LIBRARY

NEW Fairbanks Series "23" Double Ball Race SWIVEL CASTER

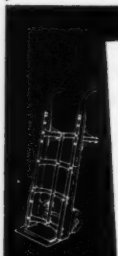
The NEW Fairbanks Series "23" Double Ball Race Swivel Caster* line is designed for greater load carrying capacity in the medium duty field.

STRONGER ON EVERY POINT

1. **NO KING-PIN** the No. 1 weak spot of ordinary casters. It's eliminated!
2. **"LOCK-WELD" CONSTRUCTION** Instead of being a separate piece, projection welding makes lower raceway integral with top plate. Retains perfect alignment!
3. **PATENTED LEG DESIGN** disperses shocks and overloads over a larger segment of raceways. Resists distortion. Lasts longer!
4. **LARGER SECONDARY RACEWAY AND BALLS** provide tremendously increased swiveling efficiency and greater shock absorption of overloads. Easier working!
5. **COINED RACEWAYS** insure smoother operation through extra hardness. Improve with use!
6. **PRESSURE LUBRICATION** by Zerk Fittings reduces friction and wear!

*PATENTED

Rigid Casters, Series "33" in matching heights



THE **Fairbanks** COMPANY

393 LAFAYETTE STREET • NEW YORK 3, N. Y.

Branches: New York 3 • Pittsburgh 22 • Boston 10 • Rome, Ga.

TRUCKS • VALVES • DART & PIC UNIONS • CASTERS

Circle No. 63 on Reader Service Card for more information

about it in this advertiser's latest bulletin.

Circle No. 28 on Reader Service Card

Bassick Co. The full story on Bassick casters is told in literature offered by Bassick.

Circle No. 29 on Reader Service Card

Yale & Towne Mfg. Co. Yale & Towne argues that making is mostly moving, and they want to tell you how to move what you make—faster, cheaper—in their latest literature.

Circle No. 31 on Reader Service Card

Kwik-Mix Co. The Moto-Bug is a gas-powered truck that takes a 10-cu. ft. hopper, 1200 lb. flat-bed or a fork to move an unusual variety materials in a hurry. Latest Kwik-Mix bulletin tells about it.

Circle No. 32 on Reader Service Card

Magnesium Co. of America. Magcoa figures you can solve a lot of your carloading problems with its magnesium dockboards. Its latest catalog tells how.

Circle No. 33 on Reader Service Card

Detroit Hoist & Machine Co. Add one of its Trojan Tractors to your hand-travelled hoists, cranes and conveyors, Detroit Hoist says, and you'll step up production. Bulletin 810 has the complete information.

Circle No. 34 on Reader Service Card

Chisolm-Moore Hoist Corp. The latest CM catalog tells how CM electric hoists might lower handling costs, hike production rates and help plant morale for you.

Circle No. 35 on Reader Service Card

Clark Equipment Co. Clark has three things for you: literature on its new Carloader with Dynatork drive; the Clark movie digest; a copy of Material Handling News.

Circle No. 36 on Reader Service Card

Westinghouse Electric Corp. Westinghouse will help you plan your vertical transportation for top efficiency though its "Buyers Guide for Freight Elevators."

Circle No. 37 on Reader Service Card

Elwell-Parker Co. The E-P Reporter No. 9 contains a lively account of an ultra-modern warehousing job recently completed with the help of Elwell-Parker consultants.

Circle No. 38 on Reader Service Card

Hyster Co. The Hyster Karry Krane Catalog shows this Hyster mobile crane at work in dozens of applications, gives complete specs and prices.

Circle No. 39 on Reader Service Card

Towmotor Corp. "The One Man Gang" is what Towmotor calls its newest 30-minute sound movie, available to you at no cost for showings to your staff.

Circle No. 40 on Reader Service Card

Bond Foundry & Machine Co. Bond's catalog K-38 illustrates and describes the full line of Bond industrial truck casters.

Circle No. 41 on Reader Service Card

The Neff & Fry Co. Before you decide on what kind of storage bin to buy, Neff & Fry invites you to look over its newest catalog that show the complete N & F selection.

Circle No. 42 on Reader Service Card

The Electric Industrial Truck Assoc.

Their "Handbook of Material Handling with Material Handling" costs a buck to anyone else, but you can get a copy free if you are in charge of materials handling for your company.

Circle No. 43 on Reader Service Card

Marsh Stencil Machine Co. Easy-to-read stencils are what Marsh sells. They have a catalog ready that shows their full line of machines and accessories for turning out easily spotted shipping messages.

Circle No. 44 on Reader Service Card

Kimberly-Clark Corp. Protective packaging with Kimpak creped wadding might save you lots of headaches if you're shipping material that can't be marred. K-C catalogs tell about Kimpak, show how it can help you.

Circle No. 45 on Reader Service Card

The B. F. Goodrich Co. Goodrich's tire and wheel analysis plan has been set up to help you cut handling costs by getting more life out of your tires. Let them tell you about it.

Circle No. 46 on Reader Service Card

Link-Belt Speeder Corp. A pile of helpful handling hints are contained in Link-Belt's new booklet, along with dozens of case histories that might suggest the solution to one of your handling posers.

Circle No. 47 on Reader Service Card

Electric Wheel Co. Their full line of wheels for industrial trailers, floor trucks and other portable equipment is shown in this advertiser's catalogs.

Circle No. 48 on Reader Service Card

The Colson Corp. Colson's new 56-page catalog tells how you can move more with less effort its line of hand trucks and other material handling equipment.

Circle No. 49 on Reader Service Card

Rotary Lift Co. Interested in cutting labor costs and boosting production? Rotary claims you can get some eye-opening info from its latest catalog that will help you do both.

Circle No. 50 on Reader Service Card

Truscon Steel Co. An illustrated catalog prepared by Truscon shows you the complete line of Truscon steel boxes and skids.

Circle No. 51 on Reader Service Card

Electrolift, Inc. Worm-drive electric hoists can make light work of material handling. The hoists Electrolift makes are completely illustrated and described in its literature.

Circle No. 52 on Reader Service Card

Service Caster & Truck Corp. Detailed specs on the new Service leveler are offered by this manufacturer.

Circle No. 53 on Reader Service Card

Rowe Methods, Inc. Rowe wants you to have the complete information on all its models of hydraulic floating docks for level-to-level truck transport.

Circle No. 54 on Reader Service Card

Coles Cranes, Inc. Mobile cranes for just about every handling application are illustrated in new Coles literature, free for the asking.

Circle No. 55 on Reader Service Card

The Yale & Towne Mfg. Co. Yale's

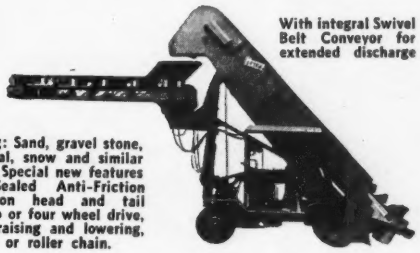
(Continued on page 99)

HAISS Material Handling

BUCKET LOADERS

LOAD 3 TO 8 YARDS PER MINUTE

One man operation
Self-Propelled
Self-Feeding



With integral Swivel Belt Conveyor for extended discharge

For loading: Sand, gravel stone, topsoil, coal, snow and similar materials. Special new features include Sealed Anti-Friction Bearings on head and tail shafts, two or four wheel drive, hydraulic raising and lowering, manganese or roller chain.

CONVEYORS • CAR UNLOADERS

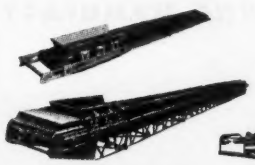
TROUGH OR FLAT BELT CONVEYORS
For loading sand, gravel, coal and similar bulk materials from cars or piles to trucks.

PACKAGE CONVEYORS
For handling bags, boxes, crates, cartons, etc. Portable or stationary mounting. All types—All sizes.

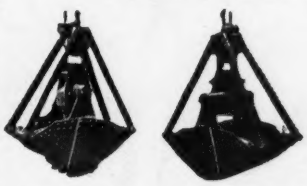
UNDERCAR UNLOADERS
Heavy duty for handling crushed stone, gravel, sand, coal and similar materials. Capacity up to 5 tons per minute.

SECTIONAL CONVEYORS

Channel Frame or Lattice Frame construction made in easily assembled individual sections for permanent or portable installation. All sizes and capacities available. Trough belt—for handling crushed stone, sand, gravel, coal and similar materials. Flat belt type—for handling bags, boxes, packaged materials.



CLAMSHELL BUCKETS



EXCAVATING-REHANDLING

Heavy duty buckets for digging and trenching, dredging and rehandling. Capacities ¼ to 3 yards. Special narrow buckets available for trenching. Ask for bulletin H-175.

For further information write, 'phone or wire. Experienced Haiss representatives are located in all principal cities.

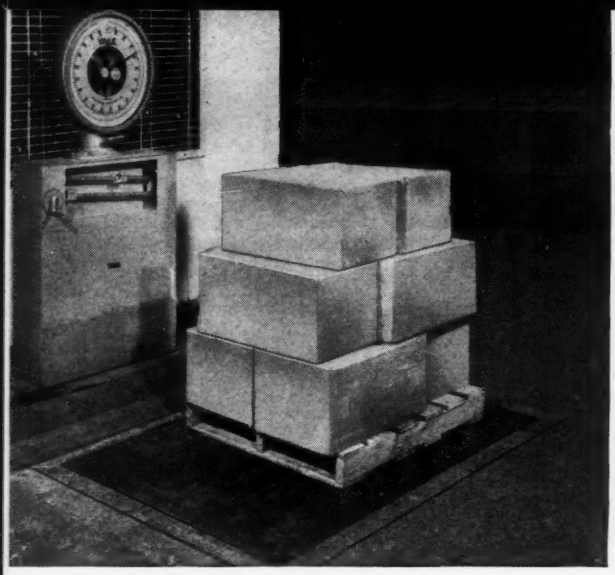
George Haiss Mfg. Co., Inc. division of Pettibone Mulliken Corp.

141st to 144th St. on Park Ave.
New York 51, N. Y.
'Phone Mott Haven 5-2200

4700 W. Division St.,
Chicago 51, Ill.
'Phone Spaulding 2-9300

NEW YORK - CHICAGO - CEDAR RAPIDS

Circle No. 67 on Reader Service Card for more information



CUT HIGH COSTS...

YALE HANDLES MORE FOR LES

Making is mostly moving. That's why maximum production economy can only be achieved with efficient tools to lift, transport, stack, and weigh materials.

Yale Material Handling Machinery is functionally designed to handle more for less. Thousands of companies are operating with vastly improved man-hour productivity and lower costs because of the speed and effort-saving efficie of Yale tools.

Time is money. Get the most out of *your* production d lars. Put Yale Material Handling Machinery to work in y plant. Our nearby representative will gladly demonstr how correct selection and application can cut costs subst tially. Make a date. Phone or write today.

THE YALE & TOWNE MANUFACTURING COMPANY

Philadelphia Division — Dept. L-190 — Philadelphia 15, Pa.

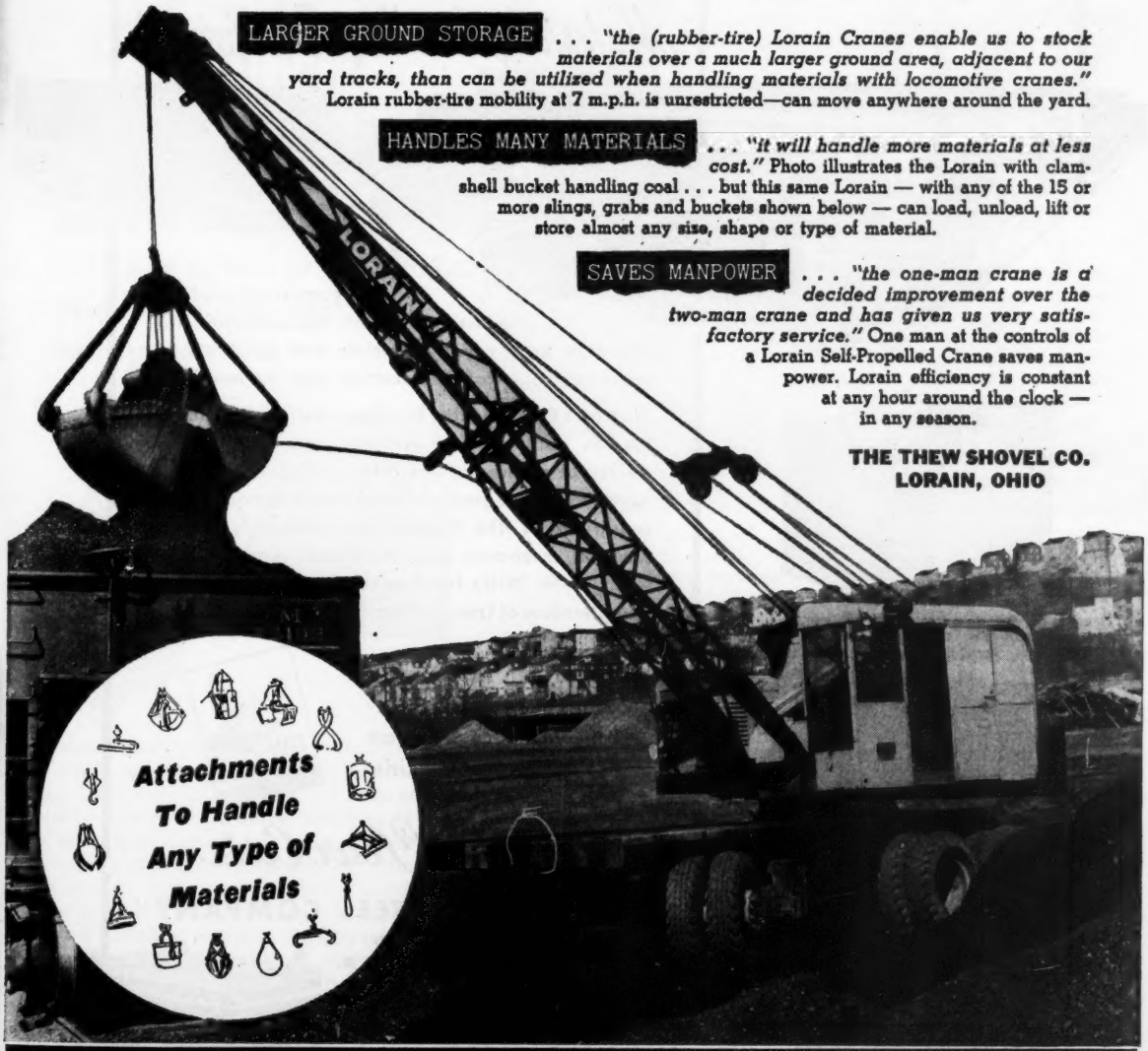
YALE

TOOLS THAT KEEP INDUSTRY "ON THE MOVE"

SCALES—Industrial • HOISTS—Hand and Electric • TRUCKS—Hand Lift · · · Electric · · · Gasoline · · · Diesel

"Our Lorain handles MORE materials at LESS COST"

A. M. BYERS CO., Pittsburgh, Pa. world's largest producer of wrought iron products, replaced their former yard crane with a new Lorain Self-Propelled Crane. From their Operating Department comes reports of outstanding advantages in material handling . . . advantages that hundreds of plants across the country are gaining with Lorains on the job . . .



LARGER GROUND STORAGE . . . *"the (rubber-tire) Lorain Cranes enable us to stock materials over a much larger ground area, adjacent to our yard tracks, than can be utilized when handling materials with locomotive cranes."* Lorain rubber-tire mobility at 7 m.p.h. is unrestricted—can move anywhere around the yard.

HANDLES MANY MATERIALS . . . *"it will handle more materials at less cost."* Photo illustrates the Lorain with clam-shell bucket handling coal . . . but this same Lorain — with any of the 15 or more slings, grabs and buckets shown below — can load, unload, lift or store almost any size, shape or type of material.

SAVES MANPOWER . . . *"the one-man crane is a decided improvement over the two-man crane and has given us very satisfactory service."* One man at the controls of a Lorain Self-Propelled Crane saves manpower. Lorain efficiency is constant at any hour around the clock — in any season.

THE THEW SHOVEL CO.
LORAIN, OHIO

THEW **LORAIN** LORAIN CRANES FOR INDUSTRY

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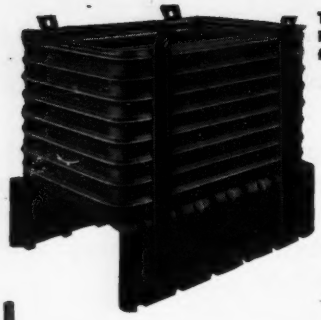


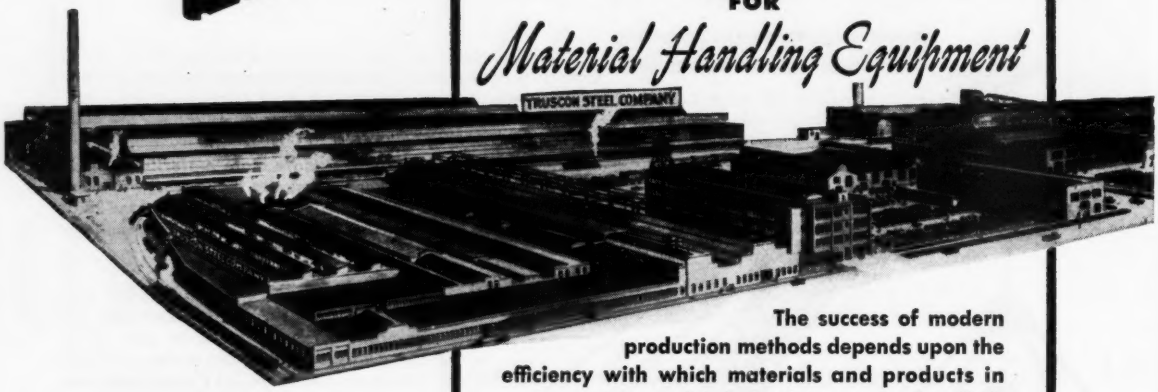
Type PB-120L Truscon Box and Platform with full length lifting lugs.

Type P-1. Truscon One Piece Steel Skid Platform.

HEADQUARTERS

FOR

Material Handling Equipment



The success of modern production methods depends upon the efficiency with which materials and products in various stages of fabrication can be handled.

Truscon's Pressed Steel Division—nationally known for the quality of its products and the dependability of its service—is fully equipped and prepared to handle your material handling equipment requirements. The Pressed Steel Division's central location, moreover, assures efficient service for all your needs. Write for free catalog describing the complete line of Truscon Steel Boxes and Steel Skids.

Write for illustrated catalog showing complete line of Truscon Steel Boxes and Skids.

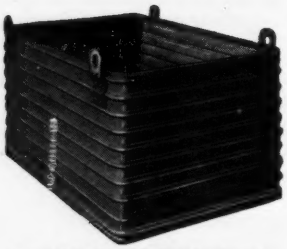
Reduce Your Costs

TRUSCON STEEL COMPANY

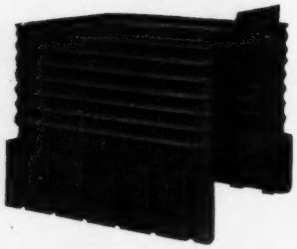
PRESSED STEEL DIVISION

6202 Truscon Ave. • Cleveland 4, O.

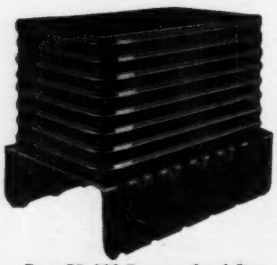
Subsidiary of Republic Steel Corp.



Type B-80C Truscon Box Equipped for Crane Handling.

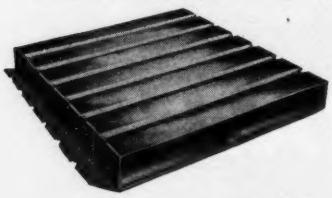


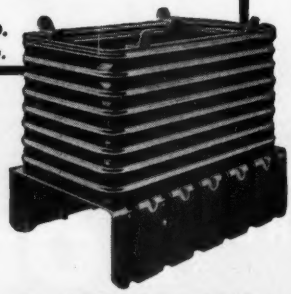
Type PB-650 Truscon Box and Platform with sliding End Door.



Type PB-120 Truscon Steel Box and Platform.

Truscon Double Face Steel Pallet.





Type PB-120T. Truscon Steel Box and Platform with Tiering Lugs.

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SPEED UP 100 TIME-WASTING JOBS

LIFT and DUMP
BAGS, BULK, DRUMS

IT LIFTS • IT DUMPS
CESCO
DUMPER

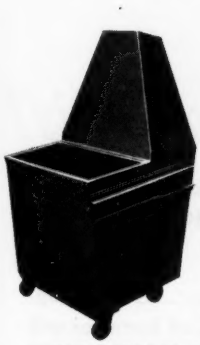
Made in various heights. Locks in place with foot pedal. Dumper and skips roll on casters.

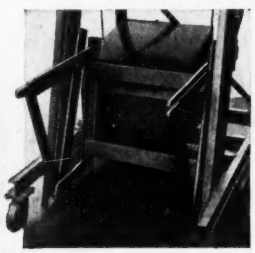
BAGS

DRUMS

DUMPING HEIGHTS
5, 6, 7, and 9 feet

BULK





FREE ROLLING SKIPS lock on the arms of the Cesco Dumper for lifting and dumping. They roll on Colson Casters from stock pile to scale to the Dumper and save hours of extra handling.

A variety of skips and loaders are available including: bag dumpers, drum dumpers, dust control types and many others. If you have a handling problem requiring lifting, upending and dumping—it may already have been solved and filed in our Cesco Dumper case histories—write today for information.

ALL KINDS OF MATERIALS can be handled easier and faster by a single Cesco Dumper and its variety of skips. That's why it's just as useful in receiving department and loading dock as in warehouse and mixing rooms. It moves on its own casters and locks in place with two floor locks. It lifts the load by cable and pulley powered by a half horsepower electric motor. Has a lifting capacity of 500 lbs. or 6 cu. ft; can handle up to 50,000 lbs. per hour. Three button control switch—UP, DOWN and STOP—acts instantly and stops the travel without coasting.

Cesco dumpers are made in standard dumping heights of 5, 6, 7, and 9 feet and in other sizes on order. Many special types of skips are made for specialized jobs.

The Cesco Dumper prevents waste by spillage . . . eliminates accidents to labor . . . reduces costs of handling dry materials or liquids in bags, bulk or drums.

COLSON Equipment & Supply Co., 1317 Willow St., Los Angeles

WRITE FOR LITERATURE

Here are eight picture-packed pages showing the various uses of the Cesco Dumper and its mechanical features. Write for your copy today!

FILL IT . . . ROLL IT . . . WEIGH IT . . . ATTACH, LIFT AND DUMP IT

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—Aren't you making a BIG THING out of this?

YOU BET WE ARE! Does 20% more power capacity at no extra cost sound big? Is 35% more work-life a big thing? Does a 20%-per-ton saving mean anything?

Why should we soft-pedal such advantages? Do you know what C&D *Slyver-Clad* Aircool Industrial Truck Batteries could do to *your* handling costs? Listen to this . . .

- **If you average 200 tons per truck per day, C&D *Slyver-Clad* Batteries will boost that average to 240 tons per truck per day.**
- **If an ordinary battery "conks out" after 6¾ hours, C&D *Slyver-Clad* Batteries will give you 8 hours before recharging.**
- **If your handling costs run to ____¢ per ton, (you figure it), C&D *Slyver-Clad* Batteries will knock them down a cool 20%.**

Now if you can laugh *that* off, you're interested in cutting profits—not costs. And we're afraid we just can't help you in that department.

C & D BATTERIES, INC.
of Conshohocken, Pa.
TELEPHONE · DIESEL · INDUSTRIAL TRUCK
LOCOMOTIVE · STARTING & LIGHTING
SALES AND SERVICE IN PRINCIPAL CITIES

Who's laughing? I want to know how C&D *Slyver-Clad* Aircool Batteries can help me cut my handling costs.

☐ Send Literature ☐ Send sales representative

NAME.....
COMPANY.....
ADDRESS.....
CITY..... ZONE..... STATE.....

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WE ARE very pleased to tell you that Bill (William S.) Wheeler was made the Editor and Publisher of FLOW starting September 15th. As Western Editor of McGraw-Hill's Factory Management and Maintenance, Bill is a little better known through the middle West than in the East; but he has hundreds of important industrial connections and friends on the Eastern Seaboard as well.

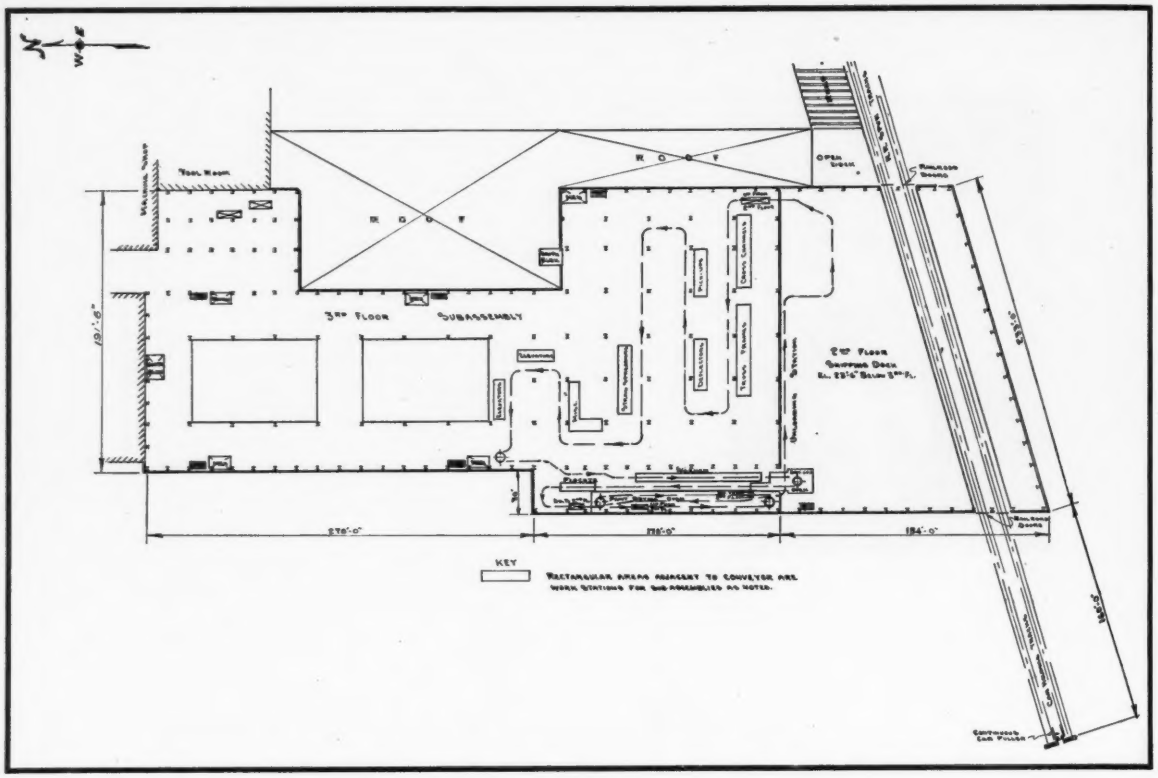
In the years he has been with Factory he has done an all around editorial job but has always leaned more heavily towards material handling so that he is exceedingly well qualified to assume the important post of editing and publishing FLOW. His industrial background with Cadillac Motor Co., his industrial engineering consulting work and his time and motion study and methods work qualify him particularly well for making FLOW more interesting than ever.

As director of industrial training at Detroit Tech and as vice president of the Industrial Management Society in Chicago, plus his many hundreds of connections throughout industry, Bill has some great new editorial plans for FLOW. We are proud to have him in our organization.

FLOW

Irving B. Dexter

President



PLAN VIEW of bundle conveyor with subassembly stations and other work areas. North and south elevators should not be confused with grain elevator assembly stations.

Conveyor Pays for Itself in Three Years

O. J. PARKS
Production Engineer
Minneapolis-Moline Co., Hopkins, Minnesota

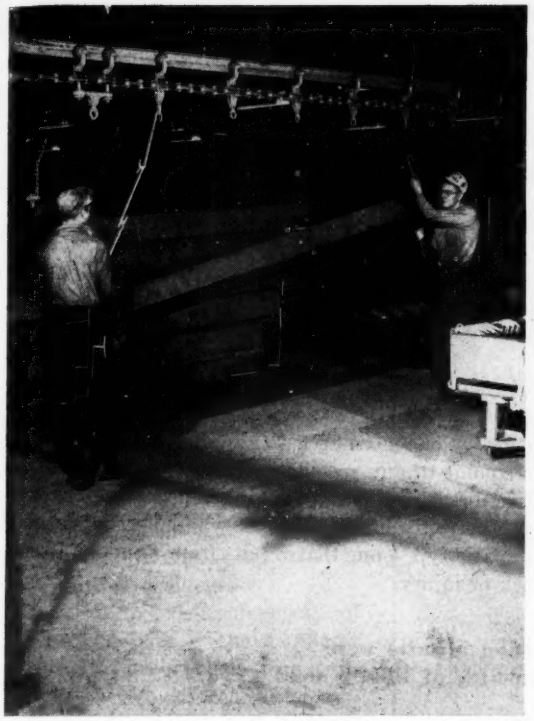
THE Minneapolis-Moline Company's Hopkins Plant manufactures combines, corn pickers and other power farm implements. A characteristic of this production is the assembly of certain components of these machines into bundles which are sent along with the main assembly as separate packages. This is necessary because the completely assembled machines would have awkward projections that would be too bulky for shipping purposes. For that reason the bundling, as well as the preparation and handling of the bundled components, is a major consideration in the over-all material flow in power farm implement production.

Process and Transport Medium

Previously, after painting (by various methods), the bundles of components were transported on an intermittent basis from bundling on the third floor to shipping on the second floor. (Some bundling was also done on the first floor.) About 50 per cent of the finished bundle volume was moved by elevator.

While two elevators of 12,000 lb. capacity were ample for all practical inter-floor material flow requirements, the large bundle volume created an excess work load, with ramifications into the production picture. Fabricated parts were transported from the first and second to the third floor; after bundling at the upper level, the bundles were moved down again

(Continued on page 60)



LOADING COMPLEX bundle or primary part on conveyor. It is powered by two one HP drive units that have top speed of 15 FPM; minimum is six FPM. Load capacity is 30 lb. per lineal foot. Clearance around turns: 4 ft. deep by 3 ft. wide by 14 ft. long.

OPERATOR wheeling typical pallet load of in-process parts onto busy elevator, which was relieved of overload by chain conveyor.

BUNDLE CONVEYOR seen from shipping floor (descending from third). Operator is stenciling parts for identification.

BIG HARVESTER machines are loaded with help of industrial tractors, while prime parts and bundles are loaded on flatcar by lift truck. Entire assembly would be too bulky.

This article was originally presented by our affiliate publication, OCCUPATIONAL HAZARDS, to the nation's safety directors as dramatic proof that old-fashioned handling methods are tremendously expensive.

We think it should be just as interesting to cost-conscious material handling executives.

The High Cost of Lifting

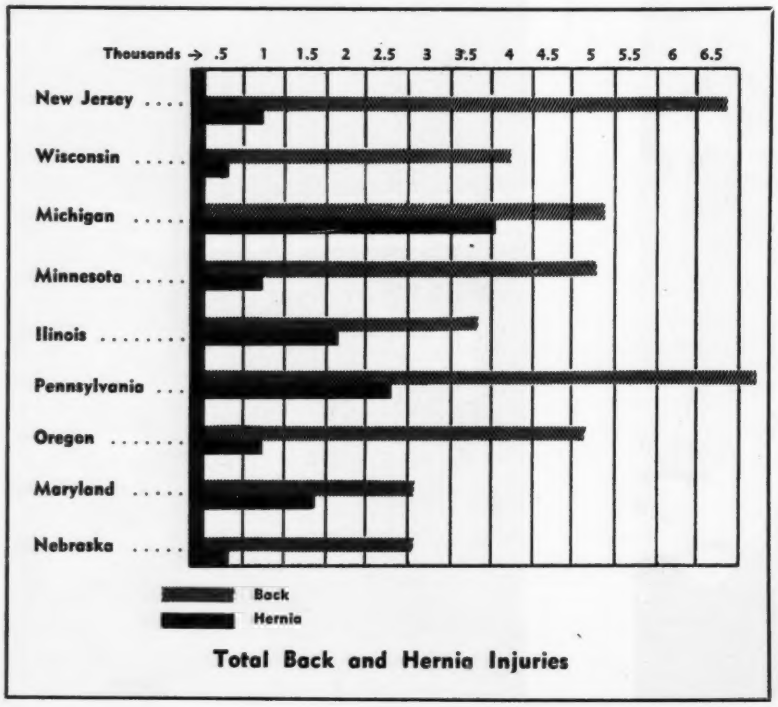
THE problem of hernias and back injuries in industry, usually growing out of workers' over-ambitious attempts to lift of move objects heavier than their muscles can handle, is a terrifically expensive one.

Figures presented in this report, rounded up from state labor departments show with eye-opening directness just how costly these disabilities can be—in terms of compensation paid and production time lost. Both hernias and injured back conditions can be long-lasting: a high percentage of them result in permanent partial or permanent total disability.

To be compensable under most state statutes, a hernia does not have to be the immediate result of a traceable on-the-job experience. A man who brings to the job a weakened stomach wall and reports to the dispensary one morning with a hernia, even though he can't point to any specific experience as the cause of his hernia, is just as eligible for compensation benefits as the perfectly sound employee whose hernia is of the traumatic type—one that results from a sudden tissue shock or injury.

Lifting injuries were One-fifth of Illinois total

Illinois, which in 1948 shelled out almost a million dollars in compensation payments to workers laid low by hernia and back injuries, has this to say about the situation in its 1948 Annual Report on Industrial Accidents: "Hernias, along with other strains, accounted for nearly one-fifth of all accidents reported



Total Back and Hernia Injuries

The Big Lift Is Breaki lustry

←How many injuries of this type occur?

Figures like those in the chart at the left leave little doubt of the need for modernized lifting and handling equipment to remove the hazard of moving heavy material by hand. In Michigan, a typical industrial state, an average of more than 25 back and hernia injuries are reported every working day. New Jersey and Pennsylvania are paying for almost 7,000 back injury cases a year—about four every working hour of every day. Even in a predominantly agricultural state like Nebraska, nine or ten men turn up daily with hernias or injured backs because of ill-advised efforts to lift

during 1948. The failure of the worker to know (or of the supervisor to teach) that the human back was not intended for use as a derrick appears to be directly responsible for a large proportion of these disabilities. While lifting with the leg muscles would in large measure prevent such mishaps, many establishments are realizing that about as many disabilities are sustained at table height, very pointedly indicating the urgent need for more mechanical handling of heavy or bulky objects."

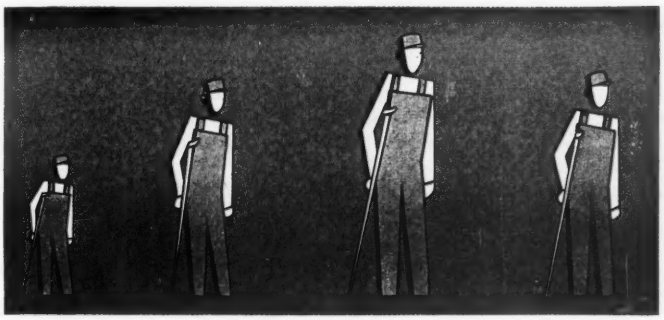
Education can only go so far.

Proper instruction of men handling heavy material is one route to fewer lifting accidents.

Posters and pamphlets can be used as effective reminders that a man's legs, not his back, were made for the strenuous job of heavy lifting. On production work in which a man encounters only four or five kinds of objects, specific regulations can be set up to control his manual handling of items too dangerously heavy to move with muscle. At the supervisory level, shop strong-men can be discouraged from tackling every challenging crate and barrel that comes along. But an educatioal campaign has definite limits

(Continued on page 27)

Lifting Injuries Cause Unusual Production-Time Losses



Minnesota	Illinois	Pennsylvania	New York
169,771	300,500	535,605	370,846

Man-Days Lost Due To Lifting Injuries

The long-lasting effects of back and hernia injuries are extremely harmful to production schedules, often keeping the worker away from his job much longer than any other common accident. For example, in Minnesota, average time-off per worker for hernia was 40 days. Illinois plants were set back an average of 57 days for each hernia or back injury, and in Pennsylvania 59 days was the average lost time for those injuries. These high figures are due, in part, to the fact that hernias which have apparently been successfully repaired frequently rupture a second and third time—and back injuries thought to be cured can be aggravated by the slightest strain.

One case, as an example, which occured in one of the country's largest metal fabricating plants, was repaired twice by surgery. Doctors refused to operate when the hernia recurred a third time. Result: a permanent total disability.

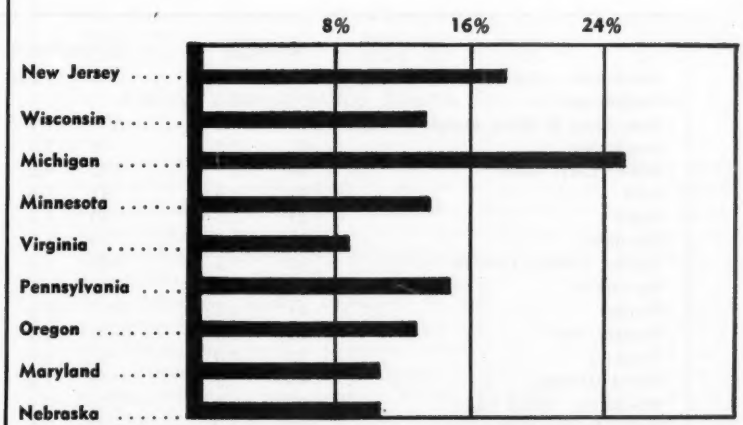
eak...ustry's Back

or move more than their muscles can take.

Being cumulative in nature, injuries of this type which are being sustained now will recur in many cases.

How does this frequency compare with other causes?

The chart at the right emphasizes the fact that these accidents account for more than 15% of all accidents in heavily industrial states, and approximately 10% of the accident total in the others. Almost a quarter of Michigan's accident total was represented by hernias and back injuries, and New Jersey was not far behind with its 17% figure.



Percentage of Back and Hernia Injuries Combined to Total Accidents

Lifting Tops the List of Accident Sources

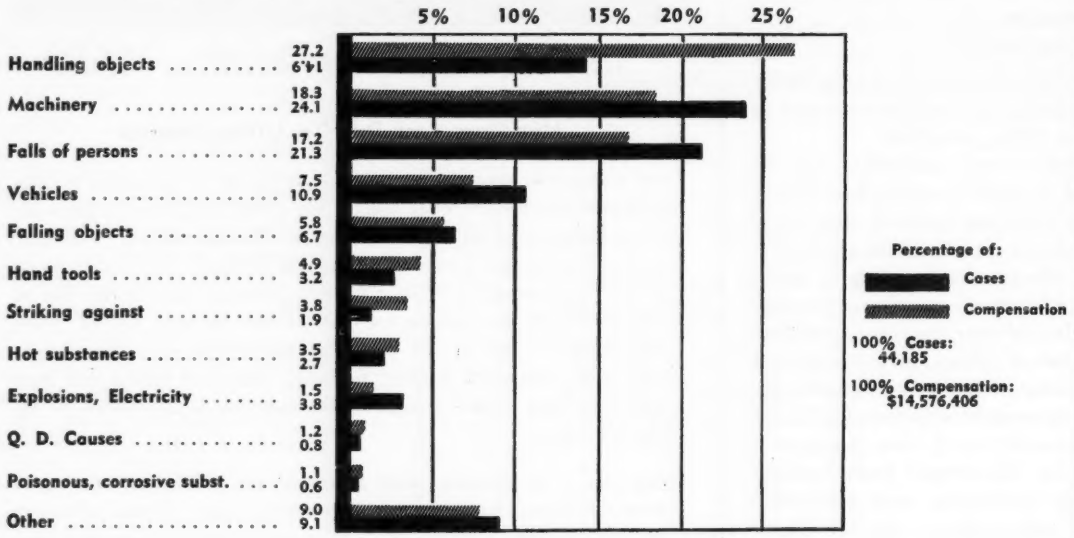
How do accidents like these occur?

Handling of objects usually overshadows all the other major sources of accidents. The excellent chart below is from the 1948 Annual Report on Industrial Accidents in Illinois.

Running ahead of Machinery Accidents and Falls of Persons—always high-scorers—Handling of Objects ran up a total of 27.2% of all industrial accidents in that state, and cost over a million-and-a-half dollars in compensation payments.

Wisconsin classifies accidents by cause in a slightly different way, putting back injuries under "Sprains and Strains," however, this classification led all other injury causes in Wisconsin, according to its 1947 industrial accident report, and accounted for approximately 20% of all its injuries.

Percentages of Total Cases And Compensation By Injury Cause



	Michigan		Pennsylvania	
Automotive Mfg.	1291	36.1%	106	4.6%
Machinery	434	12.0	...	....
Iron, Steel & Other Metals	342	9.6	650	27.9
Lumbering	91	2.6	48	2.1
Stone, Clay, Glass	24	0.7	100	4.2
Food	130	3.8	83	3.6
Paper	73	2.0	38	1.7
Chemical	54	1.5	53	1.5
Textile, Rubber, Leather	53	1.5	169	7.3
Agriculture	24	0.7	...	....
Mining	43	1.2	317	13.4
Construction	196	5.5	179	7.8
Trucking	70	1.9	81	3.4
Public Utilities	44	1.2	36	1.8
Wholesale, Retail trade	403	11.4	236	9.9
Public Employment	110	3.0	88	3.8
Service Industries	140	3.9	52	1.4
Miscellaneous	51	1.4	130	5.6
Total	3573	100%	2368	100%

Hernias Occur in Ind

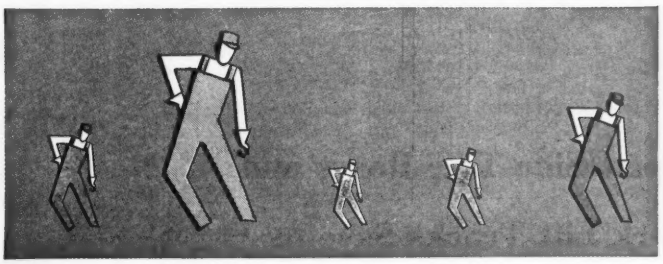
←Where do these injuries take place?

Not every state keeps figures which show the number of hernias and back injuries by industry; but, fortunately, two heavily industrial states—Michigan and Pennsylvania—were able to supply us with the information shown in the chart on the left. It is a recap of 1948 hernia incidence. A quick glance will show that hernias occur in all types of industry, and they vary some by industry from state to state. For instance, Michigan includes automobile manufacturing under the classification of "transportation," and that figure is so large

of effectiveness. The only sure way of reducing hernia and back injury rates is the elimination of the need for manual handling. Installation of conveyors and tramrails, the use of fork trucks, and the substitution everywhere of these and other kinds of mechanical handling equipment for muscle power offers the real solution to the problem.

The charts in this article are presented to show the scope of the problem in various states. In reading them, no attempt should be made to compare the figures of one state with those of another. For example: although New Jersey shows a total of two-and-a-half times as many back injuries as Maryland on our chart, when consideration is taken of the size of the working force in Maryland the figures actually show that Maryland has 1 back injury for each 74 employees, while in New Jersey the figure is 1 for every 277.

Industry's Aching Back: How Much Does It Cost?

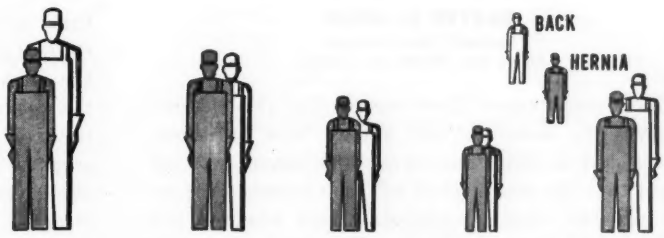


Minnesota	New Jersey	Wisconsin	Illinois	Pennsylvania
$1,351,220	$3,194,082	$562,109	$866,725	$1,804,349

One Year Compensation Awards For Lifting Injuries

Dollar figures mean even more to most businessmen than production records. That hernias and back injuries can be extremely expensive is shown by the chart above, which gives the total compensation paid in one year for back injuries and hernias in five states. These figures should impress the cost-conscious executive of the need to mechanize his handling operations wherever possible, taking the muscle out of lifting and moving.

What Is the Average Cost Per Injury?



New Jersey	Minnesota	Wisconsin	Illinois	Pennsylvania
$336 (H)	$347 (H)	$178 (H)	$169 (H)	$176 (H)
$501 (B)	$227 (B)	$134 (B)	$165 (B)	$208 (B)

Average Compensation Awards For Lifting Injuries

The average cost per back and hernia injury in five representative states is extremely high—high enough to warrant the purchase of a considerable amount of mechanical handling equipment to eliminate the need for physical handling. But the cost of some of the above-average injuries is fantastic. One Minnesota manufacturer, in 1948, paid compensation benefits to a worker with a back injury for 960 days, doling out a thumping $3,509 in compensation and medical payments. Another back injury in Minnesota dragged on for 1502 days—more than four years! That one cost $5,649 in compensation and medical payments before it was closed. In the same state, a laborer in a packing house came up with a sacroiliac sprain from wrestling with heavy beef carcasses: a total of $7,063 was spent on compensation and medical costs for him. Another example of the possible cost of a slow-healing back injury is one New Jersey accident: a single back injury reported in that state, resulting in a permanent total disability cost the employer the staggering total of $12,803!

ur ill Industries

that OH double-checked it with Michigan's Department of Labor. Pennsylvania does very little automobile manufacturing.

Mining accounts for a large number of hernia cases in Pennsylvania, and the iron and steel industry is near the top of the list in both states. It is also interesting to note that many hernias occur in he wholesale and retail trade, undoubtedly due to handling of merchanidse at the warehouse and from the store loading dock through the receiving room to departments throughout the store.

Every industry has hernia cases: wherever there is lifting or moving of heavy articles this costly injury occurs.

Open-Side Tote Boxes and Fork Lift Trucks Save in Handling Castings

TEAM WORK between driver, fork truck, and tote boxes helped make this new method a success to the tune of about $1200 per year.

BAXTER R. GRIER
Assistant Superintendent
Alamo Iron Works, San Antonio

Good management likes reports like this because it gives the facts of "old" versus "new" methods. The report is short and sweet and proves without doubt that the new method will save money. Anyone can use this type of analysis report whether you make baked beans or trucks. We used this report type analysis to sell our management on a better method of handling sash weight castings, one product of our medium size grey iron jobbing foundry.

The handling cycle for the sash weights begins at the tumblers, where the sash weights are cleaned, and ends with product being loaded on a truck for delivery.

Old: 3.3 Manhours Per 1000 Weights

Under the old method, the weights were taken from the tumbler and thrown into a shallow walled pan which was placed on a 4-wheel hand truck. The load was pulled from the cleaning room into the adjacent yard crane area, picked up by the crane and carried to the storage bins. Here the castings were inspected, counted, and thrown into piles.

The next handling operation was in shipment, generally in quantities of 1000 or more pieces. A crew of three men would go into the sash weight bin and throw the weights out into a pan while counting out the amount. The pan was then moved by crane to the waiting truck and upended, dumping the load into the truck. This total handling cycle required an average of 3.3 manhours per 1000 weights, part of which was covered by out incentive plan and was accurately recorded for years.

New: 0.8 Hours Per Thousand

Under the new method the old pans were replaced with open side tote boxes which hold 4000 pounds each. These are placed at the tumblers where the sash weights are cleaned as under the previous method. Then, under the new and present method, the weights are inspected and counted as they are handled from the tumblers and placed directly into the tote boxes.

At the convenience of a lift truck driver, the loaded tote boxes, inspected and tagged, are moved to a shipping area, clear of the congested crane area and are stacked, in storage, five high. They are designed to "nest" safely, as shown in the photograph. In making shipment, the precounted loads are handled by fork lift truck and placed on the delivery truck as a unit. The sash weights are emptied from the tote boxes at the customer's dock and the empty tote boxes returned.

Take A Look At These Savings!

MATERIAL HANDLING COST ANALYSIS REPORT

COST ANALYSIS

Time required for complete cycle in hours per 1000 pieces:

Old Method		New Method	
1. Handle from tumbler to pans	.5	1. Handle from tumbler, inspect, count, stack in tote boxes	.6
2. Move pan to crane, have crane move to storage area (excluding crane time)	.1**	(Tote boxes moved to storage area by lift truck)**	**
3. Inspect, count, put in storage bins, return defective weights and pan to cleaning room	.6		
4. (Shipping) Count, place in carrying pan	1.5*	2. Load precounted weights on delivery truck with lift truck. (Lift truck time excluded)	.1
5. Move load by crane to truck, dump weights in truck, replace pan. (Excluding crane time)	.6*	3. Return empty tote boxes	.1
	3.3		0.8

Explanations:

* Shipping time consistently was high due to difficulty in getting weights from the bins and delays waiting for crane. The 3-man loading crew used to minimize truck tie-up time resulted in high manhours cost.

** Time for crane operator and lift truck driver excluded; only time shown during such handlings is man waiting for the move, such as delivery truck driver.

RESULTING SAVINGS

1. Old Method	3.3	Man hours per 1000
New Method	.8	" " " "
Saving	2.5	" " " "
	$1.00	Average cost per hour*
	$2.50	Saving per 1000 pieces
Average yearly production	260,000	pieces
Saving per piece	.0025	
Annual saving in man hours cost	$650.00	

2. Saving in delivery truck time: Reduction in truck delay of 2.0 hours per 1000 = 260 x 2 = 520 truck hours saved. Cost of truck hour averages $1.00 without driver (which is in above). Annual truck time saving $520.00

3. Saving by elimination of breakage: Old method resulted in average of 1300 broken pieces per year due to throwing of weights from pans to bins and back. New method eliminates breakage in handling. 1300 weights, average value 35¢ each. Annual saving by breakage elimination $455.00

4. Approximately 500 sq. ft. of much needed space under crane made available and overworked crane relieved.

5. Accurate inventory made possible: under old method stock on hand was estimated by size of pile which often contained many broken weights.

6. Reduction in incorrect amounts shipped.

Gross Annual Savings $1,625.00

COSTS

50 New Tote boxes @ $10.00 each	$ 500.00
Less salvage of old pans, 1600 lb. @ $.02	36.00
Initial Cost	$ 464.00
Depreciate in 10 years = 464 ÷ 10	46.40
(Estimated) Annual repairs and maintenance	50.00
Annual Cost	$ 96.40

RESULTS

Annual savings (gross)	$1,625.00
Annual cost of tote boxes (including initial cost and maintenance based on 10-year depreciation)	96.40
Net Annual Saving	$1,528.60
Note: or if cost to be deducted in first year:	
Total saving	$1,625.00
Total initial cost	464.00
Net Saving	$1,161.00

* This one-dollar labor cost figure is used for general comparison only.

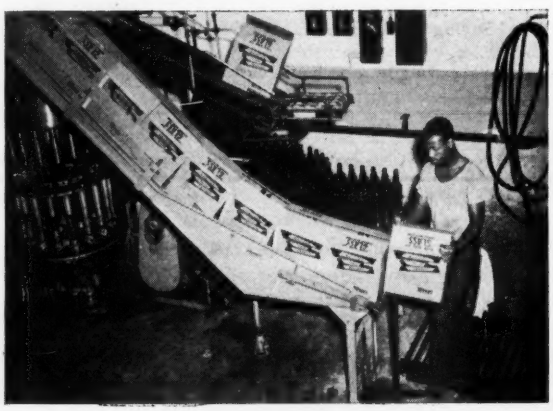
Wide-Awake Management Welcomes Reports Like This

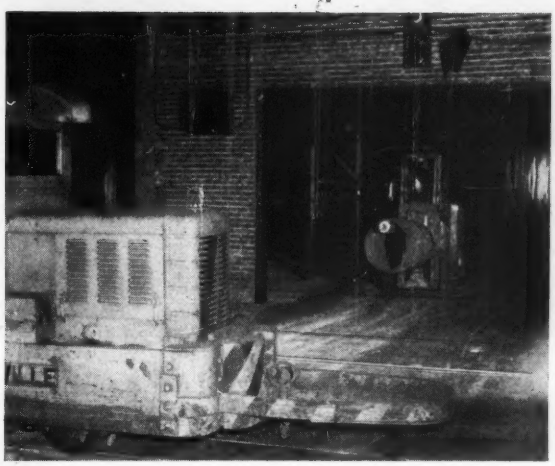
Ideas You Can Use

HYDRAULICS IS PERFORMING an increasingly important job in material handling. At this grain processing plant a hydraulically actuated truck platform (arrow) is accomplishing an unloading job very economically. The tilting pltform is 50 ft. long, and because of the tilting feature highway trailers and other vehicles with non-dumping bodies can be unloaded as though they were dump trucks. The grain falls through the grating into hoppers which are at the start of a flow-and-processing cycle.

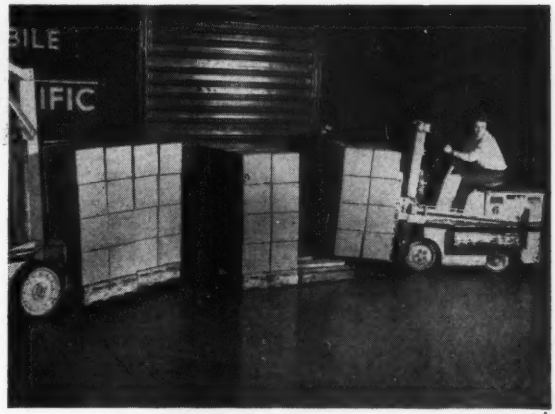
BROKEN GLASS—WITHOUT DANGER. Cullet, or broken glass, is handled in an exemplary manner at this soft drink bottling plant. While engineered handling has reduced the former amount of cullet sharply, there is still enough of it to make it advisable not to leave its removal to haphazard methods. Broken bottles are dumped into a glass crushing machine which discharges into steel drums spotted on pallets. The fork truck is shown loading the cullet for delivery to the dump. The mechanical handling of such potentially dangerous material has contributed to better working conditions and removed a worry from the minds of supervisors.

HOW'S YOUR HEADROOM? In this bottling department it's about 21 ft., and the management is making good use of it. Notice particularly the absence of obstacles underfoot—the absence of loads on the floor. That's what the headroom is for, plant engineering decided—and filling production was multiplied by four in the same space. The conveyor in the foreground brings the empty bottles from the overhead feeder line to the start of the filling cycle. The empty cartons are immediately routed to the packers via the overhead conveyor shown in the background of the view. The operation is neat, safe and productive.





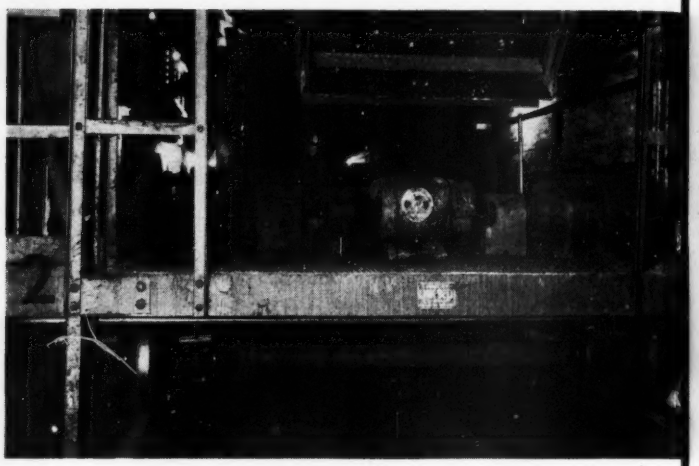
SAFE INTERSECTION. In many plants "traffic cops" can be used to good advantage at points where a lively flow of cross traffic endangers limb and property. The automatic type of cop shown here is foolproof and relatively inexpensive. The arrow points to the signal apparatus—a light and bell system which warns the approaching lift truck in the background when the narrow-gauge railway approaches the intersection. The latter affords either vehicle but a limited view of the approach, and accidents here would be costly. The investment in the traffic control equipment is said to be under $100, a low price to pay for safety.



AN EXPENDABLE PALLET used in the new compounding and lube oil plant of Phillips Petroleum in Kansas City is paying big dividends. Before, packaged goods ready for shipment were moved to freight car or trailer truck and unloaded from pallets by hand into the car or trailer. Now, materials are picked up by fork truck from the "take it or leave it" pallet and the complete load moved direct into the car. Thus, time is saved; cars are loaded faster; and goods are moved to customers quicker. Pallet loads can be moved to storage area in the plant on pallets, tiered to ceiling heights, and moved to shipping as needed.

MONORAIL CONVEYOR carries meter covers to final line at Sangamo Electric, Springfield, Illinois. Before, trucks were used to move the covers. Covers were stacked on truck, the truck pushed to line, and then returned empty to be re-loaded. About eleven trips per day were required. Now this is eliminated. Conveyor serves also as "travelling stockroom" and provides continuous supply to final lines. The results: (1) storage are for trucks at line saved to the tune of 100 sq. ft.; (2) about three hours of trucking labor eliminated (3) cover breakage eliminated; (4) better controlled delivery rate to final line.

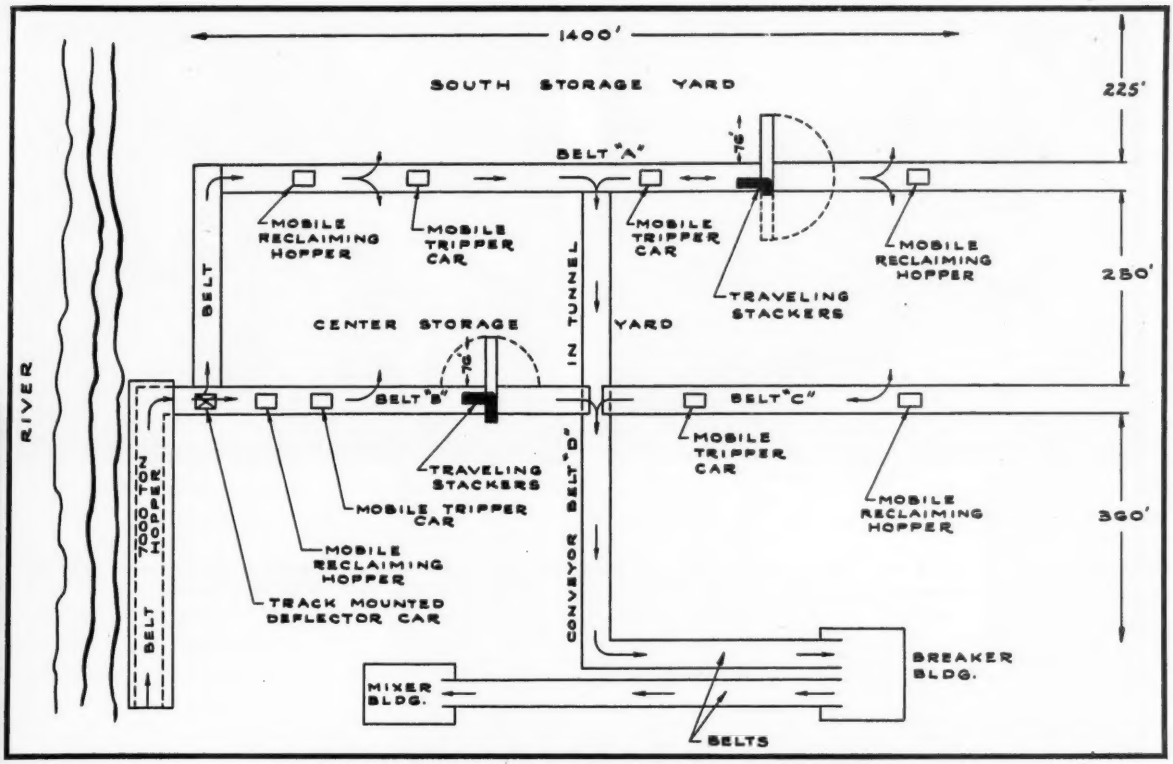
1 **BOOM CONVEYOR** feeds coal from incoming freighter into three-compartment 7000-ton hopper on the dock. Coal is received . . .



2 **BY A TRAVELING SHAKER FEEDER** which is spotted beneath any of the three compartments. Coal is then moved by conveyor to . . .

3 **TRAVELING STACKERS** in the yard. The intake arm (shown in a raised position) is lowered to the belt to receive coal. Next . . .

4 **AS COAL IS NEEDED,** one of three crawler mounted cranes with 60-ft. booms and 3-ton buckets return the material to the belts.



AN AVERAGE 4100 tons of coal is handled on this system every eight hours.

Mobile Cranes and Conveyors - - a Flexible System

Julius A. Clauss
Chief Engineer
Great Lakes Steel Corp.

Handling flexibility is a must in the huge coal storage yards of Great Lakes Steel Corp., Detroit. Here's why . . . (1) coal must be received during the limited nine months period that the Great Lakes are open . . . (2) handling equipment must perform receiving and storage at the same time reclaiming is in process . . . and (3) the oldest coal must be used first to minimize oxidation.

How to do it . . . four crawler-mounted cranes work with a network of heavy duty belt conveyors in this 665,000 sq. ft. storage yard of the Blast Furnace Division. These handling tools, cranes and conveyors, move an average of 4100 tons of coal each eight hour day from yard to plant. Four types of coal are drawn from the yard and fed continuously in eight hours to supply 146 coke ovens which operate around the clock. Mobile cranes working with fixed conveyors paved the way for the success of this handling system by giving flexibility and efficiency.

Coal is transferred from self-unloading freighters into a 7000-ton-capacity receiving hopper, whence it is delivered via 42-in.-wide rubber covered canvas belt conveyors to one of two storage areas. Traveling rail-mounted stackers (boom conveyors) transfer the coal from the belts to stockpiles, where it is distributed by bulldozers.

The four crawler-mounted cranes, which have 60-ft. booms and three-ton buckets, are the tools which start the vast tonnage from the yard into the plant. A centrally located delivery belt (4), operating in a tunnel at right angles and beneath belts A, B and C, transports the coal to other conveyors which feed the breaker building, then the mixers.

It is the practice to draw from one storage area while the other is being filled, a vital requirement met by the cranes because of their mobility. In this way the oldest coal is used first and excessive oxidation in storage is prevented. The cranes also provide the flexibility needed by drawing from any of four types of coal and feeding belts in sufficient quantity to insure full operating capacity. The placement of the conveyors and the 60-ft. booms of the cranes keeps the latter's travel to a minimum for feeding, and coal can be quickly transported from any point in the 450,000-ton capacity yard.

Operator at 30-watt console main station. This wattages gives adequate in-plant signal without interfering with other radio users. The truck operator at right is reporting, and will get new assignment pronto. That's piling up ton miles.

2-Way Radio Triples Truck Load Hours — 1

W. V. H. MOORE
Foreman of Material Handling
TAPCO Plant of Thompson Products, Inc., Cleveland

WHEN every department in a plant operates its own material handling trucks—in the absence of a centralized material handling department—idle machine hours are an inevitable result. Tapco's specialized handling department was created to keep our trucks changing in-plant miles to ton-miles. When your trucks must cover long distances in buildings and yard areas, the best way of controlling their travel is an effective means of communication. Our plant extends 1400 ft. in one direction, 2000 ft. in another, and the total plant property covers 110 acres.

In January of 1946, when we began our operation as a specially constituted material handling department, we installed engine hour meters and discovered that some of our trucks were in operation only 20 per cent of the time, others, 50 per cent of the time. Today, most of the fleet units under our jurisdiction are operating 92 per cent of the time. This comparison expresses succinctly the value of a communications system.

Originally we had a supervisor contact all the truck operators personally. His job became increasingly difficult as the plant was enlarged and the tonnage grew.

We next tried the flasher system, and arrangement of red signal lights spotted about the plant. The sup-

(Turn to page 67)

CHANGE MAN-HANDLING TO MASS-HANDLING

Your quickest, surest step to lowered production costs and increased profits is to eliminate excess handling of your raw materials and products . . . to change man-handling to MASS-Handling with Towmotor Fork Lift Trucks and Tractors. Reduce the costly man-hours spent transporting, lifting and stacking products within your plant . . . and your production payroll costs drop as much as 60%. Warehouse costs nose-dive, too, because Towmotor uses every available inch of overhead storage space. Find out how YOU can cut your production costs . . . write TODAY for a copy of "Handling Materials Illustrated." Towmotor Corporation, Div. 8, 1226 East 152nd St., Cleveland 10, Ohio. Representatives in all Principal Cities in U. S. and Canada.

every handling job is easier with Towmotor MH*

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THE ONE-MAN-GANG
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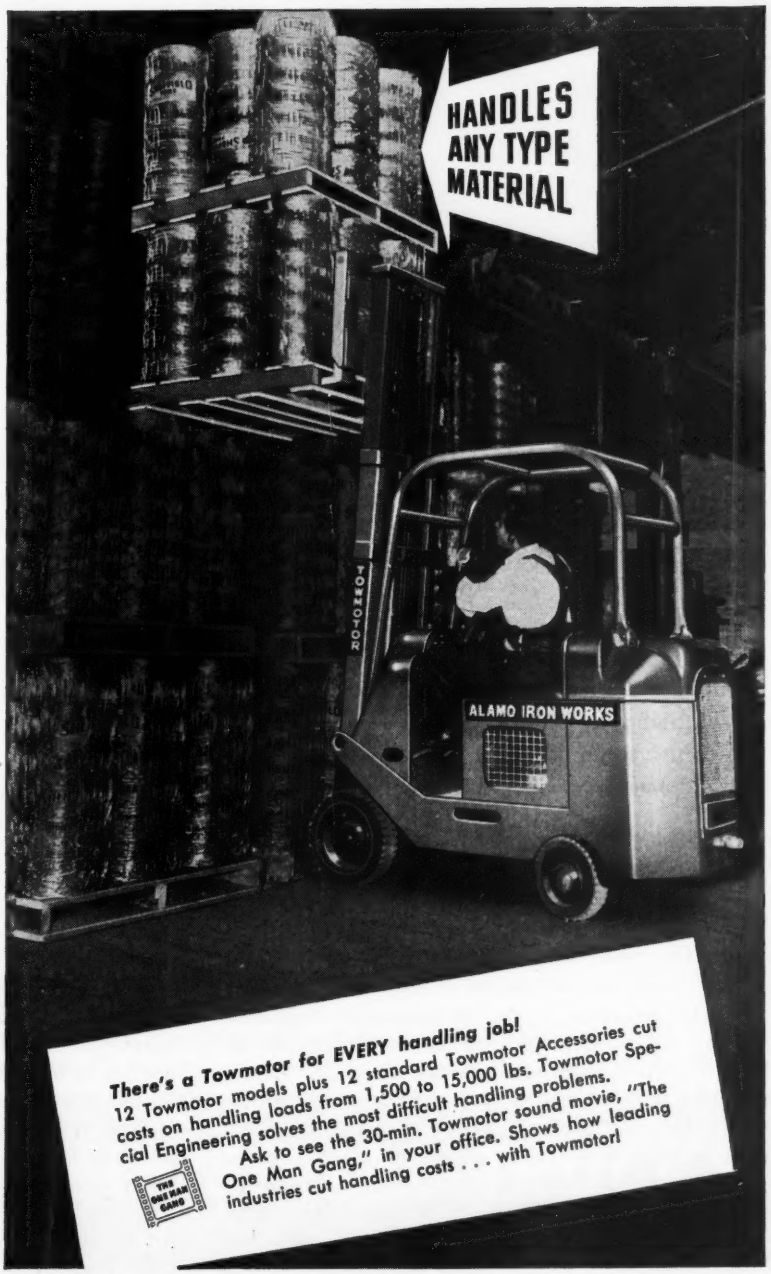
FORK LIFT TRUCKS and TRACTORS

***MH is Mass Handling!**


HANDLES ANY TYPE MATERIAL
TOWMOTOR
ALAMO IRON WORKS
There's a Towmotor for EVERY handling job!
12 Towmotor models plus 12 standard Towmotor Accessories cut costs on handling loads from 1,500 to 15,000 lbs. Towmotor Special Engineering solves the most difficult handling problems. Ask to see the 30-min. Towmotor sound movie, "The One Man Gang," in your office. Shows how leading industries cut handling costs . . . with Towmotor!

Circle No. 73 on Reader Service Card for more information

THIS ELEVATOR solved serious inter-floor flow problem. Loaded Roll Off truck body is being transferred on it by industrial tractor.

A 15,000 lb. capacity floor-to-floor elevator gave the necessary flow between the basement order assembly room and ground floor shipping.

Elevator Opens Bottleneck

CHARLES C. BASSETT,
Plant Engineer
Belknap Hardware & Mfg. Co., Inc., Louisville

OUR company is a wholesaler of hardware selling to retail stores in about 30 states. We carry approximately 80,000 items in our catalog, and in and out shipments will total approximately 32,000,000 lb. a month. Our plant consists of a series of multi-story buildings which are connected by tunnels or bridges.

Twenty elevators in the 14 connected buildings take the orders, after packing, to the basements in their respective buildings, whence they are transported by tractor-train to the basement in one warehouse. Here, the various parts of all orders are combined by destination. The basement in this warehouse was chosen for final order assembly because it is connected to all buildings by tunnels. This made possible the mass movement of the merchandise by tractor-train.

Automatic Elevator Was Remedy

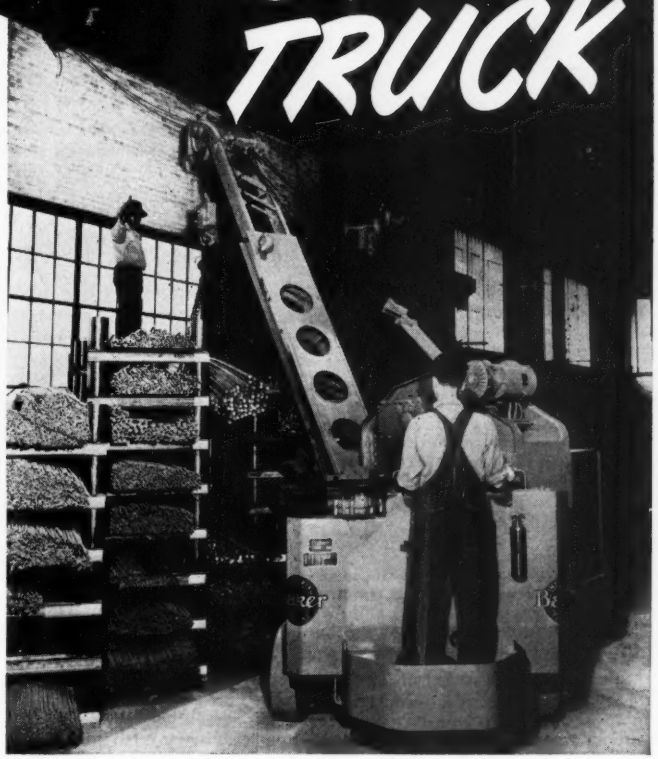
The assembled orders must be transferred one floor up to the ground-floor shipping department. This assembly operation cannot be performed on the ground-floor level because of numerous obstructions from buildings, roadways, yards, truck docks and traffic.

The tunnels at basement level provide a series of connected traffic lanes with access to all areas.

The movement of the tonnage from the basement to the outbound carriers on the ground floor posed a serious problem for some time. Originally the orders used to be loaded on 4-wheel push trucks for transfer by elevators to the ground floor. The difficulty was: 1. Waiting time at the elevators, whose capacity and platform size was designed for the volume of 25 to 30 years ago, when some of the buildings were built. The principal job of these elevators was (and is), to bring freight down for final order assembly. 2. Waiting time resulted in congestion in front of the eleva-

Cost of Handling Steel Bars Cut in Half *with* BAKER TRUCK

JONES & LAUGHLIN DETROIT WAREHOUSE USES CRANE TRUCKS AND PORTABLE RACKS FOR MORE EFFICIENT HANDLING AND STORAGE



★ Specially designed portable sectional racks for storing steel bar and rod stock plus the use of a BAKER Crane Truck have cut handling costs by one-half at the Jones & Laughlin Steel Corporation's Detroit Warehouse. This stock was formerly stored by hand in upright position, requiring laborious manual handling. Even with overhead cranes, considerable hand labor was necessary. Previous to the purchase of the truck and the installation of the portable racks, Jones & Laughlin used 6, 8, or more men to pile steel and fill orders. The entire operation is now handled by three men.

With the Baker Crane Truck and sectional storage racks, costs have been halved—and the crane truck still has time to handle steel packs—a further saving not anticipated when it was purchased.

Illustration shows the BAKER Crane Truck handling steel bars stored on sectional racks set at 45° angles in 15 x 15 foot bays.

A Baker Material Handling Engineer will be glad to show you how similar savings can be made in your plant or warehouse.

BAKER INDUSTRIAL TRUCK DIVISION of *The Baker-Raulang Company*
1219 WEST 80th STREET, CLEVELAND 2, OHIO • *In Canada: Railway and Power Engineering Corp., Ltd.*

Baker® INDUSTRIAL TRUCKS

LOW-LIFT HY-LIFT FORK & RAM CRANE TRACTOR PLATFORM

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TEAM UP

. . to save you money

Want a money-saving combination? Order Barrett Lift-trucks and Skids. They pay for themselves over and over again—eliminate loading and unloading—piling and unpiling. Materials move as a single unit, not piece by piece.

Pile Materials on Barrett Skids

Barrett Skids are simple, economical, rugged—designed for long years of hard use. Hardwood maple tops—high carbon manganese steel angles. Jig constructed. Made to fit any make hand or power-operated lift-truck—any width and length—with any desired superstructure.

Haul Your Skids on Barrett Lift-trucks

That's the way to cut handling time 50% to 75%! *One* man with a Barrett Lift-truck can out-work more than 3 or 4 men. Why postpone savings that might run into thousands of dollars each year? Act now!

*Model AB-748 Lift-truck—Capacity 2000 lbs . . . 17¾" wide . . . 48" long . . . lowered height 7" . . . single stroke 1⅝" lift . . . raised height 8⅝" . . . adjustable lifting mechanism . . . spring handle holdup . . . roller bearings . . . will handle skids up to 36" wide by 60" long.

†Type "PS" Skids—36"x48" with 6½" or 7½" underclearance—⅞" Lumber—capacity 2000 lbs.

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Circle No. 75 on Reader Service Card

ROLL OFF body shown in position in which it is winched on or off the delivery truck, which has track and guard rail. Hydraulic cylinder adjusts track to fit any height dock. One side of double winch (behind cab) pulls body on, other side pulls it off by use of sheave.

tors. 3. This, in turn brought on a certain amount of confusion and lost time. Not infrequently a load that had just been brought downstairs for processing was taken up by mistake. 4. Thus there was interference with order assembly in the basement as well as with shipping on the ground floor.

An analysis of these conditions convinced Plant Engineering that a separate freight elevator was necessary to connect the basement and the ground floor level only, permitting loads to be sent up without the interruptions that prevailed on three adjoining elevators. The latter serve 12 floors and, in view of their 6000 lb. capacity, were overworked as it was. The waiting time that had developed on these older elevators, by the way, was partially remedied by installing in them an inter-communicaton system with an outlet on every floor, which replaced the usual bell signal system. Thus, instead of pushing a button, a worker on any floor level could instantly talk with the elevator operator. If the latter reported a delay, the waiting man could proceed to another elevator.

"Roll Off" Truck Bodies

Following a survey of the tonnage and schedules, Plant Engineering decided on a 15,000 lb. capacity automatic elevator with an 8 ft. by 15 ft. platform. The platform size was actually determined by the dimensions of a specially engineered "Roll Off" truck body, a freight box, which has been patented by the company. Its inside dimensions are 5′ wide by 13′ long by 54″ high. Thus there is sufficient play on the elevator for the freight box which is made of metal and mounted on six casters. Four 8″ casters are on the corners, and two 12″ casters with a 4″ face in the center. This arrangement gives a short turning radius and permits maneuvering of the sizable boxes in the 12′ by 16′ bays which are throughout the warehouse.

Better Flow, Better Equipment Use

The installation of the hydraulic floor-to-floor elevator thus extended the use of these truck bodies. The following improvements were noted as a result of the revised flow methods. 1. The smaller elevators were released from bringing freight out of the basement. 2. The Roll Off bodies could be loaded in the basement instead of on the first floor. 3. This eliminated congestion around elevators as well as in the work areas on the two floor levels. 4. Flexibility in handling was obtained because the caster-mounted truck bodies could be manipulated manually on short moves or spotted in a loaded condition by industrial tractor, besides their usual function as demountable freight boxes on the truck chassis. It is estimated that their use enables one truck to do the work of seven. This is an important factor in view of the limited truck dock facilities.

Thermoid Ruff-Top Conveyor Belting "Floats" Packages On 35-Degree Incline!

Save time—save money—save labor. Specify Thermoid Ruff-Top Belting

Thousands of small, rough, irregularly-shaped points of soft rubber handle packages or cartons with full gripping power . . . *up or down inclines as much as 35 degrees.* Light packages literally "float" on the soft surface that allows the gripping action of the belt to take maximum effect.

Whatever your belting problems, you can count on Thermoid's continuing research and product development for uniform top quality in all types of conveyor belting. To insure long life and low maintenance cost, specify Thermoid Conveyor Belts when you buy conveyor systems.

For replacement belting your Thermoid distributor carries a full stock of Thermoid Belting to meet your requirements. If you have an unusual application, your Thermoid distributor can call on the Thermoid field representative whose broad experience in *all* fields of industry equip him to help you select the right Thermoid belt for your job.

For greater economy, longer service life and larger load capacity, specify Thermoid.

It will pay you to *Specify* Thermoid

Thermoid Quality Products: Transmission Belting • F.H.P. and Multiple V-Belts • Conveyor Belting • Elevator Belting • Wrapped and Molded Hose • Molded Products • Industrial Brake Linings and Friction Materials.

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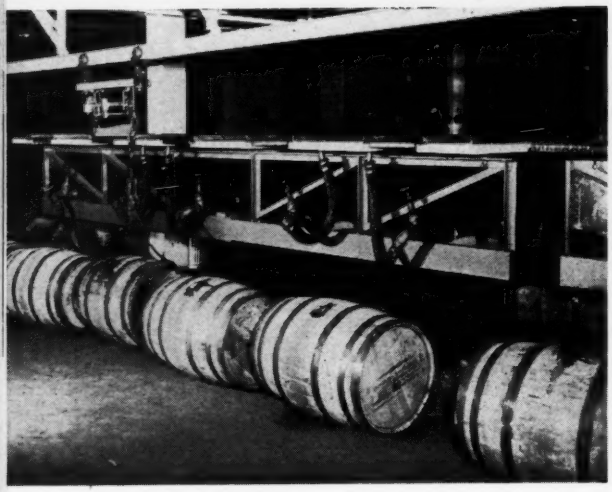
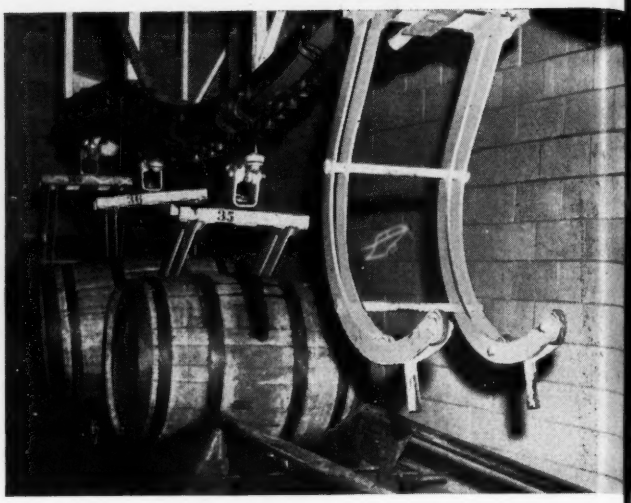


HYDRAULIC LIFT with dump tanks. Trolley scale is shown at the left-hand side.



SKID UNDER VERTICAL CURVE illustrates method of discharging traveling barrel.

Roll Out The Barrel . . .

Wm. F. LUCAS
Vice-President and Director of Engineering
Brown-Forman Distillers Corp., Louisville

"Roll out the barrel" is a good title for a song. But it's expensive and time consuming to do in a plant. "Let's minimize the hand handling and do the work with conveyors." That was the byword when materials handling men went to work to design a production plan for the new bottling plant of Brown-Forman Distillers Corporation, Louisville, Kentucky.

The handling of barrels through the many stages of whiskey production has for hundreds of years been a hand operation of a herculean nature. Some attempts have been made to mechanize the handling job with varying success.

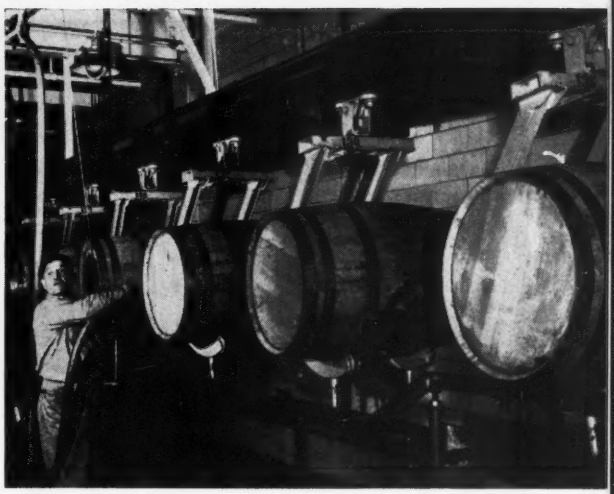
The new Brown-Forman barrel handling system for barrel after barrel of that popular brand of "bottled-in-bond" bourbon—"Old Forester", is now completely conveyorized. Once the barrels are loaded on the specially designed conveyor, they are moved without pause through many operations. Barrels start their travel on the ground floor of the bottling house and end up on the floor above. The results: time and manpower reduced. But read on and get the facts.

GUIDE PINS engaging rail at loading.

Hydraulic Lift in Regauge Room

The conveyorized operation starts in the regauge room, where government men determine the proof of the distilled product. The regauge operation traditionally required a two-floor layout. On the upper level, a predetermined percentage of barrels was emptied into dump tanks, and the empties were routed to the lower level for weighing. Then once again they had to be

VIEW OF TRAVELING BARRELS shows positioning arm and positioning pin A and B on line.



DISTILLED water is added after dumping as barrels travel on modern conveyor.

. . . Mechanically

transported upstairs for refilling after the proper determinations had been made according to government specifications.

In the new plant, repeated handling and the two-floor layout have been eliminated by means of a hydraulic lift. The full barrels are rolled over the dump tanks at floor level, and drained. The weight of the empty barrels is then determined by a scale suspended from an overhead rail. The full tanks are then hydraulically elevated and the whisky is returned by gravity through a flexible hose to the original barrel. The hydraulic lift consists of two sections, each with five 50-gallon tanks. The application of the lift not only minimizes barrel handling, but also centralizes the regauging operation and saves considerable floor space.

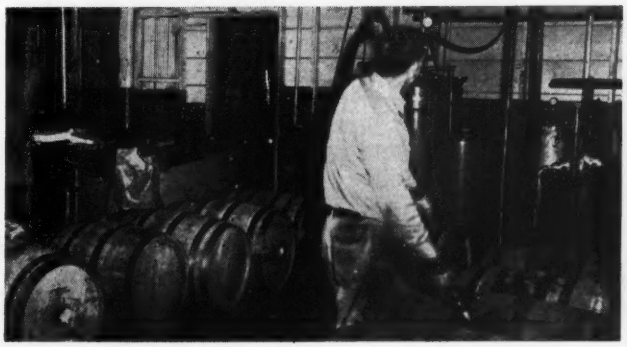
From the regauge room, which is the start of the dumping and bottling cycle, the barrels are carried up to the second floor and through the subsequent operations by the chain conveyor. Incidentally, there are two identical conveyors for the two divisions of the bottling house, the "bonded" side and the "taxpaid" side.

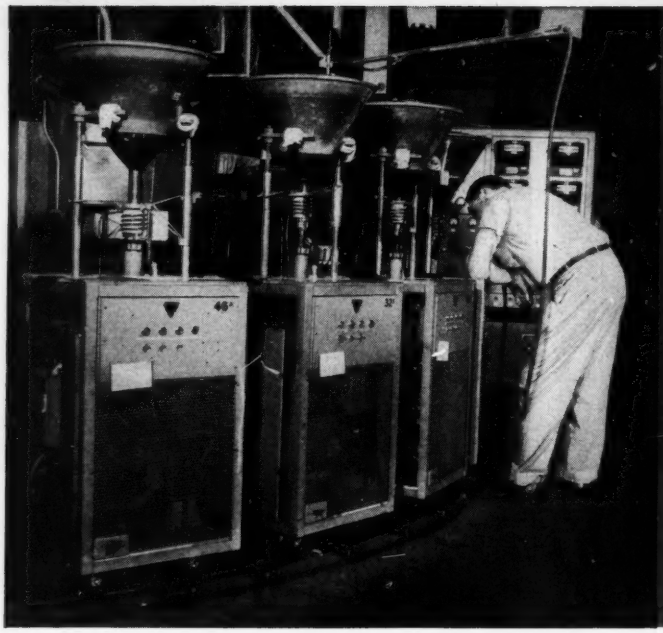
Barrels Revolved in Cradle

As can be seen from the photographs, the load carrier is of the cradle type, with two rollers on each of the two carrying arms. These rollers permit the barrel to be revolved in the cradle, and thus facilitate several operations.

The loading is done along the loading pit, where the cradles are dropped below floor level. Extending downward from the bottom of each cradle arm is a pin which travels between steel guides. The pins center the carriers and hold them rigid for loading as the full

SMALL VIEW of old method which shows both the greater effort and larger space that was required.





To process TV tubes, Du Mont's C.R.T. Division in Allwood, N. J., must bake them out at high temperatures while passing through a long tunnel-type oven on costly high-vacuum tube pumping units. Substantial savings are realized by equipping these units with Bassick Grooved-Wheel Casters and moving them on angle iron track.

Bassick Grooved-Wheel Casters move heavy loads quietly and rapidly. Available in 4 in., 6 in., 8 in. and 10 in. sizes, swivel and rigid.

Du Mont proves materials-handling costs are the Reducible 30%!

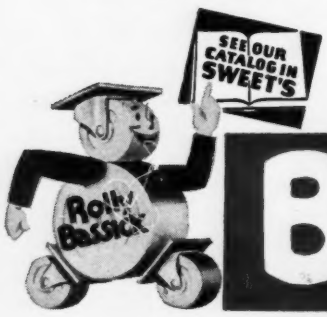
Du Mont's unique use of Bassick Casters proves materials-handling costs *can* be reduced. Like Du Mont, you'll find it well worth your while to look into this cost-saving opportunity. For though such expenses as wages, taxes, plant overhead are mainly fixed, cost analysts point out that materials-handling (about 30% of total cost) is still possible to cut. MORAL: There's extra profit awaiting you in the "Reducible 30%."

Here's a cost-cutting angle on the Reducible 30%

If you handle materials frequently in the same direction, you'll save time, labor, wear on floors and "rolling stock" by doing as Du Mont and other top companies do . . . use Bassick Grooved-Wheel Casters on angle iron track.

Investigate Bassick's complete array of time-and-maintenance saving helps . . . "FLOATING-HUB" shock-absorbing casters, position locks, heavy-duty casters, the new "Alcore" rubber-tread aluminum wheels, the amazing new "Flying Saucer" caster, etc.

For information on these products, write to THE BASSICK COMPANY, Bridgeport 2, Conn. Division of Stewart-Warner Corp. *In Canada:* Bassick Division, Stewart-Warner-Alemite Corp., Ltd., Belleville, Ont.



Bassick

Making more kinds of Casters . . . Making Casters do more

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barrels, weighing between 380 and 400 pounds, are rolled on.

The cradles are suspended from swivel hooks which are attached to four-wheel trolleys spaced at 48" centers on an endless chain. As the cradle leaves the loading pit, the line starts the ascent to the second floor. Here a right angle turn must be made. This is accomplished by a positioning arm which engages a horizontal projection at the top rear of each cradle, and rotates it 90 degrees. Enroute to the second floor, the conveyors pass through doorways into a 2-story shaftway. The doors are equipped with limit switches, so that when they are closed and locked, the power is cut off automatically.

Selectivity Obtained with Unloading Points

The first station on the upper floor is the receiving room. A government regulation requires that all the barrels for one "dump" be in a single room under lock and key before dumping is begun. For this reason, three parallel strands of the conveyor extend through the length of this room, providing conveyor capacity for 252 barrels in the "tax-paid" receiving room.

Once a barrel has been placed on the conveyor it is not irrevocably committed to continue through the cycle; it can be removed easily at several convenient points. This is accomplished by skids which are placed under the barrel at any of several points where the conveyor dips. While such removal is seldom necessary, this task can be performed effortlessly when the occasion arises. The rollers in the cradle arm facilitate the discharge of the heavy barrels from the traveling conveyor by use of the friction skid.

Cradles Adapted to all Needs

As the conveyor makes a 180-degree turn from the receiving room to enter the dump room, a man stands by to remove the bung from the barrel. In the dump room, the barrel is turned bung down in the cradle, to empty the whisky

(Continued on page 50)

CM METEOR

● Heavy duty electric hoist for stationary, plain, geared or motor driven trolley suspension. Single and two speed models. Capacities: ½ to 5 tons.

Here's Plant Improvement that

Pays off in 3 Ways

HOIST POWER

LOWERS HANDLING COSTS — Picks up raw materials, or finished parts for assembly and moves them along for pennies in power and seconds in time.

ACCELERATES PRODUCTION — Takes the slowing up "lags" out of assembly line movement. One man precision "spotting". Speeds up handling in shipping.

IMPROVES PLANT MORALE — Saves the backs and muscles of men so that they may produce with "morning" efficiency in late afternoon. Aids in accident control.

Frankly, we don't know how many factories have cut costs by putting CM Electric Hoists on production jobs, but we ***do know*** they keep coming back for more and more Meteors and Comets. You couldn't ask for more convincing evidence of a product's usefulness to industry than a constantly growing demand.

CM Meteor and Comet advantages are fully described in the complete CM Catalog. Write us for a copy and the name of your local distributor.

CM COMET High speed, sturdy, portable electric hoist. One hand control. Plug in on single or 3 phase power line. Capacities: ⅛ to 1 ton.

CHISHOLM-MOORE
HOIST CORPORATION

(Affiliated with Columbus McKinnon Chain Corporation)

GENERAL OFFICES AND FACTORIES: TONAWANDA, N. Y.

SALES OFFICES: New York, Chicago and Cleveland • Distributors Everywhere

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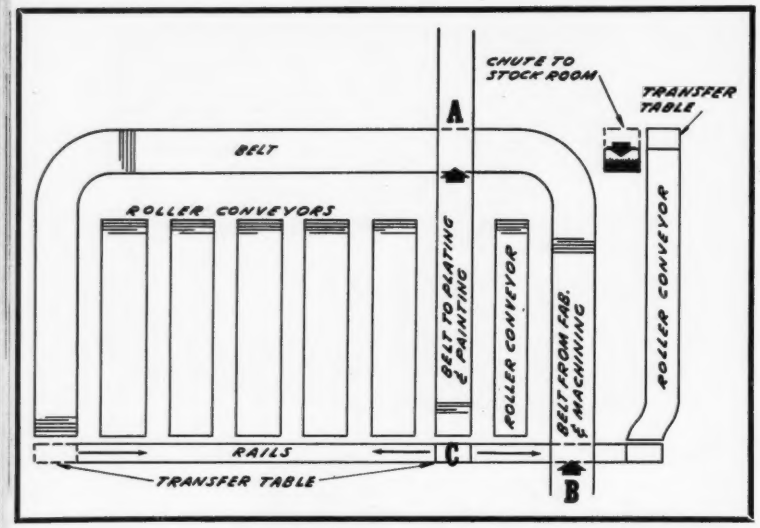


ONE OPERATOR can handle hundreds of thousands of parts through this centralized dispatch station each day. Through the use of transfer buggy, all lifting has been eliminated.

REVERSIBLE BELT transports stock to and from painting and plating departments on the lower floor. Only the dispatcher can change direction of the belts.

Central Conveyor Dispatch Statio

What it Meant to Us:

1. Decreased time and effort for handling material.

2. The utilization of overhead space for many inter-departmental moves.

3. One-man control of in-process material.

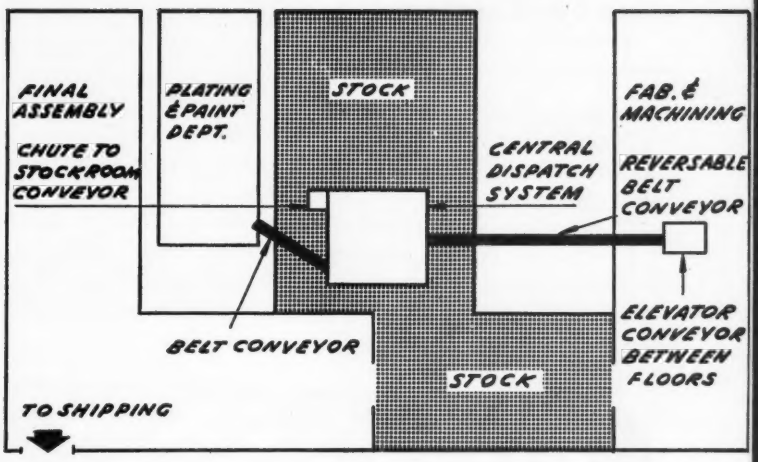
4. Visual control for a large portion of semi-finished stock.

5. Temporary storage in non-manufacturing areas instead of in departments where floor space is at a premium.

WITH the introduction of a centralized conveyor dispatch station about three years ago, the A. C. Gilbert Co., New Haven, Conn., engineered a material flow with regard to (a) inter-departmental (and inter-buildings) transportation, (b) in process storage, and (c) stock control. Main advantage of this conveyor system is that it coordinates three buildings and has done away with much rehandling and congestion because of excess traffic. Ten improvements were noted, as described below.

The location of the dispatch station is shown in the accompanying sketch. It consists of six parallel roller conveyor lines, designed for temporary storage, and two belt conveyors and one chute which lead to other departments in the same and other buildings. A flanged-wheel transfer buggy, equipped with a roller bed, shunts loads on and off the various conveyors. A second buggy, also indicated, diverts goods from one of the roller conveyors to the chute.

CASED PARTS leave machining area on roller-powered belt. Conveyor bridges two buildings, is reversible to allow other goods to be sent in from the dispatch station.



DISPATCH STATION is centrally located to other buildings. Shaded area indicates the basement stock room. All the buildings are interconnecting at several points for better flow.

for Inter - Building Parts Flow

INCLINED CONVEYOR (A), delivers to plating, painting. Belt (B), is 300 ft. long, brings goods from fabrication. Transfer table (C), has roller bed, shunts loads to the conveyors.

BARRELS BY CONVEYER . . .
(Continued from page 7)

or spirits as it passes over a 30-foot stainless steel trough.

Still in uninterrupted transit, the barrel is rinsed. Demineralized water is poured into the emptied barrel, and the bung is replaced. The advancing conveyor now drops slightly so that the barrel, without being dislodged from its cradle, engages a pair of stationary skids. The result is a forward rolling motion facilitated again by the rollers in the cradle arms. This assures a thorough flushing of the interior of the barrel. The rinse water is then dumped into another trough. As the barrel approaches the end of the rinse trough, another short friction guide rotates the barrel a half-turn to bring the bunghole up and thereby prevents dripping on the floor.

The barrel continues to the last operation in its cycle: head scraping and disposal. Government regulations require all identification to be removed from the barrel when the content is emptied. This is done with a power tool as each barrel is automatically discharged from the conveyor via a friction skid, and rolled to the scraper in a half-standing position.

From the scraping room, the conveyor returns to the regauge room.

The time-tabled flow of barrels makes it practicable to chute the empties directly to waiting trucks at the loading dock below, and thus eliminate the storage problem previously involved in accumulating shippable quantities of used barrels.

A Space and Work Saver

The conveyor is powered by three one HP caterpillar drives (all on the second floor) which are of the floating type. The inner drive frame is free to move on four bronze bushed "V" wheels in a fixed secondary frame to which is attached the conveyor track. This makes the floating drive unit sensitive to chain resistance. The driving effort is resisted by suitable springs strong enough to hold the floating frame in position under ordinary load. The linkage from the stationary frame to the variable speed reducer balances the load between the three drives. The line normally operates at eight FPM, which is two barrels per minute.

The long-accepted practice in the distilling industry of hand-rolling barrels from operation to operation resulted in accumulations of barrels at each stage. For example, in dumping, the empties were set aside for the next operation, when they would have to be handled again. This entailed tying up considerable floor space in temporary storage.

With our present conveyor method, the barrels travel suspended, and move without interruption at a controlled and constant pace from the regauge room to the loading platform. This has made possible a maximum economy of motion, effort and space.

Now . . . for the first time, Steel-Parts—famous for custom-engineered steel belt conveyors—offers the new Steel-Parts METALOK lightweight roller conveyors. These new low cost ball bearing roller conveyors will cut handling costs, speed production because they are *engineered to do your job with maximum efficiency.* Specifications: 1-3/8" - 16 gauge, cadmium plated steel rollers; hardened, free-running ball bearings; frames formed of 14 gauge steel; new improved interlocking section connection; adustable guard rail on outside of curves. Straight or curved sections available in 3 widths, adjustable supports. Get full details on these new Steel-Parts METALOK lightweight Roller Conveyors today.

Model 614 Illustrated (6" pitch, 14 gauge links)

STEEL PARTS

Makers of America's Most Complete Line of STANDARD AND CUSTOM-BUILT STEEL BELT CONVEYORS

Steel-Parts steel belt conveyors give you a clean, flat, sagless surface of steel . . . easy to clean, economical to use. If you need one conveyor or an entire conveying system—Steel-Parts has just the right unit, *engineered to do your job best.*

FIND OUT WHY more and more major companies are using Steel-Parts Conveyors . . . MAIL THIS COUPON NOW!

A few choice territories are still available—write for details.

STEEL-PARTS
Manufacturing Co.
Division of Blackstone Manufacturing Company, Inc.

Steel-Parts Mfg. Co. (F10)
4634 W. Harrison St., Chicago, Ill.

☐ Please send me complete information, including engineering data on your new Roller Conveyors.
☐ Send full details and specifications, including engineering data, on your Steel Belt Conveyors.
☐ Have your engineer call to discuss our problems.

Name .....
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City ..... Zone ..... State .....

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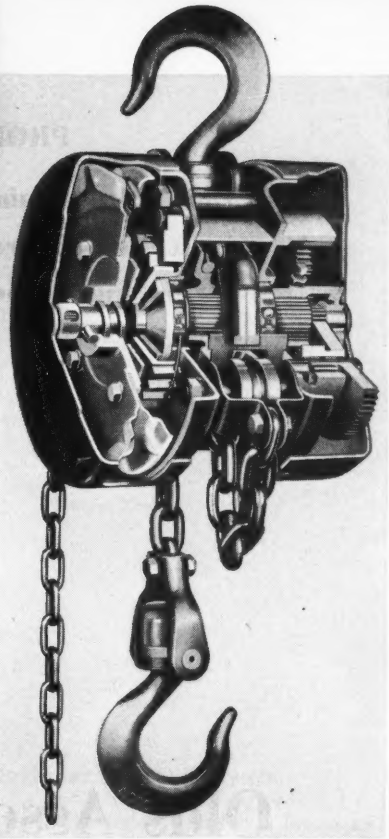
SAFEWAY



We have sacrificed absolutely nothing to obtain this light portable hoist . . .

21 Points of Superiority

1 **A Rigger's Hoist**—Light in weight, compact and rugged. Built to withstand wear and abuse as well as overloads. No protruding parts to snag on clothing.

2 **A Fully Enclosed Hoist**—Handwheel, load brake and load wheel protected from harmful foreign matter by means of heavy steel stampings.

3 **Accessibility**—Only a screw driver and a small adjustable wrench are required for repairing or dismantling.

4 **Load Chain**—Chain is the heart of any chain hoist and we are proud of the quality that goes into every link. It is made in our own mills, the largest in the world, from materials selected and processed from billets to finished wire in our wire mill, guided by almost a half a century of experience with electric welding and controlled by engineers and metallurgists keenly abreast with the latest developments. With SAFETY uppermost among our objectives, we have developed a product combining maximum wear resistance with ability to withstand extreme impact.

5 **Load Chain Guide** shrouds load sheave. Effectively guides chain into load wheel and protects these parts from falling dust and dirt.

6 **Load Wheel**—Ferrous alloy, reversible and with accurately formed pockets. A spline fit to the alloy steel load wheel shaft which is supported on sealed precision ball bearings. Reverse when new chain is installed and you have a new assembly.

7 **Automatic Wick-type Lubricator** for load chain and load wheel covers the links with a fine film of oil which is self-replenishing every time a link passes the wick. This high pressure oil film increases the life of the load chain tenfold.

8 **Stripper**—Fabricated steel.

9 **Top Hook**—Nickel-chrome-molybdenum alloy steel, drop-forged and heat-treated. Rocks and swivels will open before fracturing.

10 **Top Crosshead**—Alloy steel, drop-forged and heat-treated. Rocks in steel straps which are projection-welded to hoist frames stronger than the hook they support.

11 **Hoist Frame**—Two drawn steel sections of shock-resistant steel.

12 **Driving Spindle**—Nickel-chrome-molybdenum alloy steel. Machine-cut teeth. Operates on heavy-duty roller bearings. No cantilever loading.

13 **Load Brake**—Weston type with uniform composition lining and silent pawl. Effective whether hot or cold, wet or dusty.

14 **Gear Train**—Center planetary system using modified involute stub tooth form with all gear teeth generated from solid steel blanks.

15 **Internal Gear**—Nickel-chrome-molybdenum alloy steel with machine-cut teeth. Heat-treated and secured to frame by means of projection-welding.

16 **Gears and Pinions**—Nickel-chrome-molybdenum alloy steel with machine-cut teeth. Heat-treated and mounted on heavy-duty roller bearings.

17 **Gear and Pinion Shafts**—Stationarily-mounted alloy steel, surface-hardened and ground.

18 **Pinion Cage**—Ferrous alloy, is a spline fit to the load wheel shaft.

19 **Bottom Hook Coupling**—Alloy steel, forged and heat-treated, permits easy replacement of load chain. Load carried on forging itself, not on bolt or pin stronger than the hook it supports.

20 **Bottom Hook**—Nickel-chrome-molybdenum alloy steel rocks and swivels. Operates on a Timken thrust bearing which is enclosed in a heavy pressed steel cover and lubricated for life. Has wide throat opening, will open before fracturing.

21 **Lubrication**—The gear train is enclosed in an oil-tight chamber. Those parts not lubricated for life are supplied from the central oil pool. The hoist should operate for years with no attention other than the replenishing of the oil in the wick oiler.

WRIGHT—"THE LINE WITH THE GOOD NAME"

ACCO

York, Pa., Chicago, Denver, Detroit, Los Angeles, New York, Philadelphia, Pittsburgh, Portland, San Francisco, Bridgeport, Conn.

WRIGHT HOIST DIVISION
AMERICAN CHAIN & CABLE

HOISTS TROLLEYS CRANES

TRADE MARK

In Business for Your Safety

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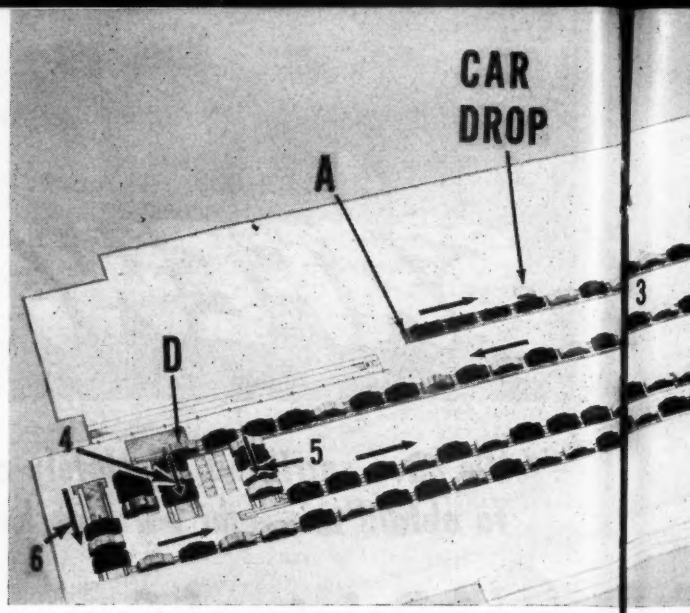
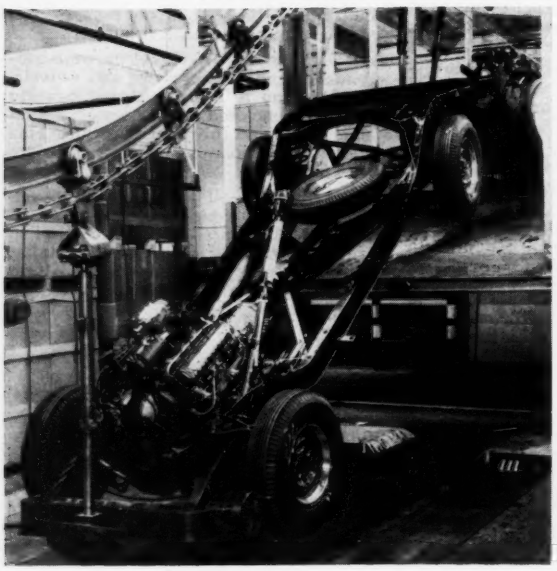
PROBLEM:

How to move materials in a limited area and get high production

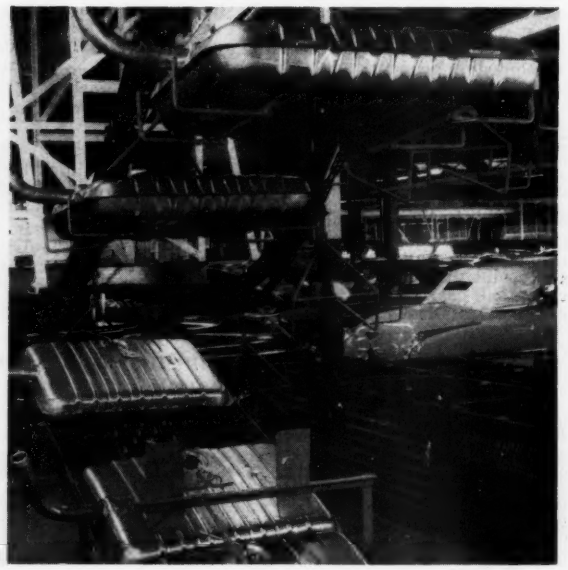


This streamlined new line helps to produ

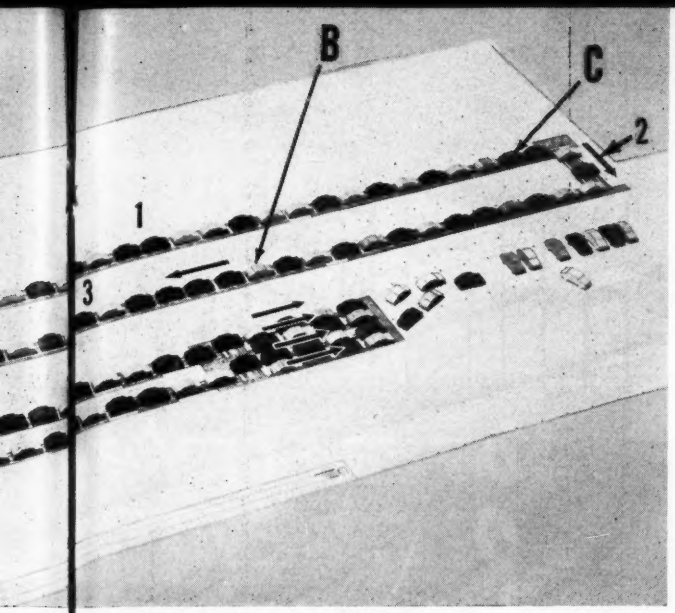
Olds Assembly Plan Features Parallel Cross Transfer Conveyors



CHASSIS WITH ENGINE is lowered onto the final assembly line. Inverted angles on pallet conveyor engages wheels, securing chassis on line.



FINISHED GAS TANKS are brought by overhead trolley conveyor from second floor. Conveyor hook drops tank and it rides down the slide rail to its point of assembly.



ANSWER:

Use overhead, pallet and cross-transfer conveyor systems

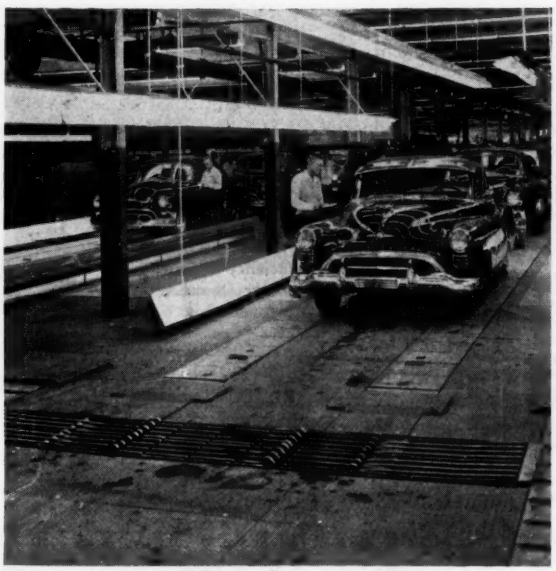
elps to production and space problems.

DO YOU have the problem of installing final assembly conveyors in parallel lines because of lack of space for straight line flow? Many plants do.

When production is geared to slow output, or work is intermittent, rapid transfer of units between lines is not too important. But when high volume is a must, transfer operations between parallel lines must be done quickly. If not, these stations will become bottlenecks and slow down the entire system.

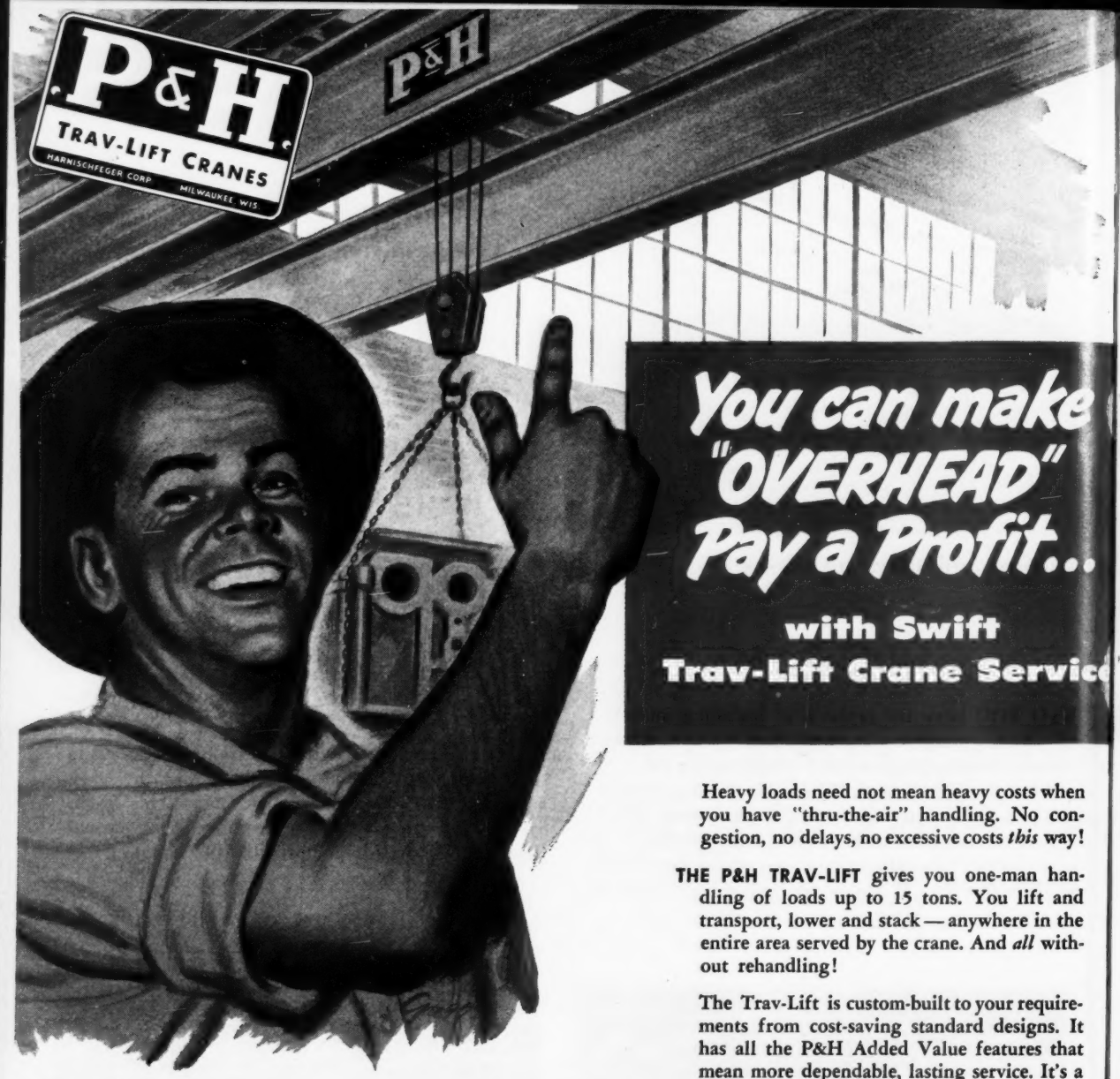
A good example of high-speed transfer is found in the newly installed final assembly line at the Oldsmobile Division, General Motors Corp. This line is capable of turning out 85 cars per hour at the present time. The system is comprised of 42 conveyors of

(Continued on page 69)



CROSS TRANSFER: Tread of conveyor (background) moves car onto conveyor in front. Its forked tread with raised lugs, pulls car off main line at right moment as it comes down the line.

CARS MOVED LIKE TOYS on the many cross-transfer conveyors. Here the cars take an automatic ride to other assembly lines or are shunted to repair section.



You can make "OVERHEAD" Pay a Profit...

with Swift Trav-Lift Crane Service

Heavy loads need not mean heavy costs when you have "thru-the-air" handling. No congestion, no delays, no excessive costs *this* way!

THE P&H TRAV-LIFT gives you one-man handling of loads up to 15 tons. You lift and transport, lower and stack — anywhere in the entire area served by the crane. And *all* without rehandling!

The Trav-Lift is custom-built to your requirements from cost-saving standard designs. It has all the P&H Added Value features that mean more dependable, lasting service. It's a product of P&H — America's leading builder of overhead handling equipment.

P&H Trav-Lift Cranes are built in capacities up to 15 tons

Get the Trav-Lift Story. It means new economy and efficiency in your handling if your service needs do not warrant investment in a heavy-duty crane.

These added values
protect your investment

VARIABLE SPEED FULL MAGNETIC CONTROL provides 5 distinct steps for all motions: controlled from pendant push-button or from operator's cab.

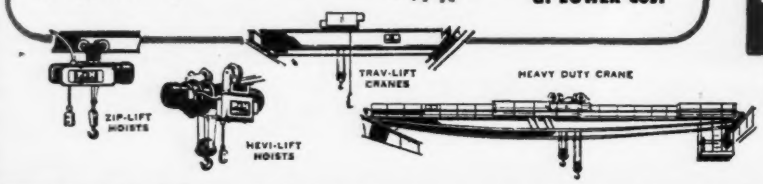
SAFE — Only 110 volts at the push-button when floor-controlled. Start-stop main line contactor, disconnect switch, thermal overload protection, magnetic limit switch and powerful brakes assure maximum safety.

ALL-WELDED BRIDGE AND TROLLEY incorporates the most important factors in reliable service — rigidity, safety, accessibility.

LIFE-TIME CONSTRUCTION—Motors designed specifically for crane service — high starting torque, frequent reversal. Shaved gears, grease sealed antifriction bearings throughout.

COMPETENT ENGINEERING SERVICE—P&H materials handling engineers will gladly give you their years of experience in working out your particular problems. Write us.

Handle it "THRU-THE-AIR" at LOWER Cost



P&H TRAV-LIFT CRANES

4643 West National Avenue
Milwaukee 14, Wisconsin

HARNISCHFEGER CORPORATION

IVATORS • OVERHEAD CRANES • HOISTS • ARC WELDERS and ELECTRODES • SOIL STABILIZERS • CRAWLER and TRUCK CRANES • DIESEL ENGINES • CANE LOADERS • PRE-ASSEMBLED

BOTTLES, BAGS, BOXES . . . MOTORS, MUSHROOMS, MAGAZINES

Whatever your product . . . however you package it . . . you'll handle it faster and cheaper with Rapistan

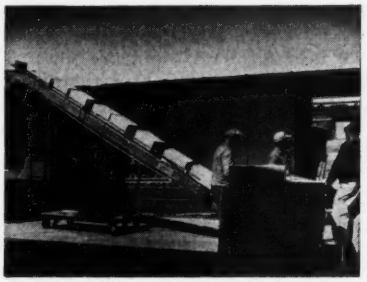
Whether you need a short-length gravity conveyor for fast truck loading, or a complete, multifloor power and gravity flow system . . . you'll find the right Rapistan equipment to meet your needs exactly!

GRAVITY CONVEYORS — Rapid-Wheel and Rapid-Roller, for low cost package movement.

STEVEDORE, JR. — Fast, easy loading, unloading, stacking. Gas model available.

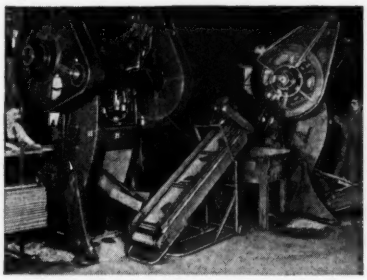
FLOOR-VEYOR, JR. — Floor to floor or horizontal movement of light products.

FLOOR-VEYOR — Floor to floor movement, heavy materials. Ideal for attic storage.



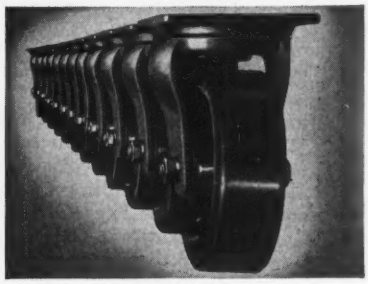
RAPID POWER BOOSTER — Heavy-duty loading, unloading; high, efficient stacking.

POWER-VEYOR — Fast, horizontal movement of all materials. Lengths to 150 ft.



PRESS-VEYOR — For stampings, small parts. Models also available for hot forgings.

HAND & PLATFORM TRUCKS — Sturdy, smooth-rolling. Long, continuous service.



RAPISTAN CASTERS — Steel-Forged and Flame-Hardened, or Cold-Forged.

Among people who know handling equipment, Rapistan ranks first. The reason? *Supreme dependability.* Rapistan products are designed to give trouble-free service long after most others have been replaced. For dependable uninterrupted flow of products — *through* packaging, storage and distribution — buy Rapistan! It's profitable.

All product names, "Rapistan", "Material Flow" — T. M.

RS

Representatives in Principal Cities

Rapistan
MATERIAL *flow* EQUIPMENT

CONVEYORS: Power or Gravity, Portable or Stationary
CASTERS • PLATFORM TRUCKS • HAND TRUCKS

Write for your free copy of "Rapistan Material Flow at Work".

The RAPIDS-STANDARD COMPANY, Inc. **198 Rapistan Bldg., Grand Rapids, Michigan**

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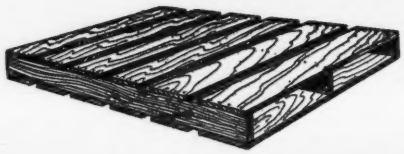
ON THE  PALLET

NEWS • VIEWS • TRENDS

GOULD-NATIONAL BATTERIES, INC., became the new name of the National Battery Co. when the stockholders of the latter firm recently approved the change proposed by the board of directors. The same sales and field engineering organizations, which have been serving heavy industry, mining, the railroads and the telephone companies under the name of the Gould Storage Battery Corp., will now operate under the new name. Sales and field engineering headquarters for this group will continue to be located in Trenton, New Jersey. The policies, management and operation of Gould-National Batteries, Inc., will remain the same as those followed heretofore by Gould and by National. M. W. Heinritz has been elected vice president in charge of industrial sales of Gould-National.

THE PLANT MAINTENANCE SHOW, which drew industrial executives from 35 states and many foreign countries, when it was conducted for the first time early this year, will be held again at the Auditorium, in Cleveland, Jan. 15-18, inclusive. This was announced by Clapp & Poliak, Inc., New York, the exposition management. Present indications are that it will be two to three times the size of the initial show. Already, 120 companies have leased booth space which exceeds by 61% the total area used for the first show. Also to be repeated will be the Plant Maintenance Conference which attracted approximately 1500 engineers and executives, one of the largest attendances recorded at technical sessions of this type.

CRAZY QUILT OF LAWS. . . . A charge that there is "no rhyme or reason" for the wide range of capacity ratings placed by different states upon highways which have and are being built to identical specifications, was made in a statement filed with a Senate Interstate Commerce subcommittee by Verne M. Drew, representing the Truck-Trailer Manufacturers Association, Inc. Drew emphasized the inconsistency of state laws which permit large loads on its highways but on passing into another state the same highways are supposed to fail unless some of the load is taken off.

THE LYON-RAYMOND CORP., GREENE, N.Y., recently celebrated its 110th anniversary with a full week of open house—while the plant was operating. Guided tours of the plant began approximately every hour in the daytime; additional tours were conducted in the evening. Employees' families and residents of Greene and the surrounding territory took advantage of the occasion. The celebration also marked the 28th anniversary of the purchase of Lyon Iron Works by George G. Raymond, who is president of the company under its present name.

FIVE SENIOR EXECUTIVE APPOINTMENTS in the manufacturing and sales management of the Philadelphia Division of the Yale & Towne Manufacturing Co have been announced by Elmer F. Twyman, Vice President in charge of the Philadelphia Division. The new executive appointments: James P. Kinney, General Sales Manager, to succeed Samuel W. Gibb, who recently resigned; James A. Shellenberger, Director of Advertising, Publicity and Market Research, to replace James S. McCullough, who also recently resigned. Appointments in manufacturing management are: John McCarley, Production Manager, who will have charge of production planning and scheduling, the order department and receiving; C. Eugene Moore, Works Manager; Bruno A. Moski, Chief Industrial Engineer (also a new post). The proximity of our press time prevented The proximity of our press time prevented use of photos with this announcement. See the November FLOW for the full story with photographs.

MEN IN THE NEWS

CLYDE E. Cochran, 44 years an engineer with The Elwell-Parker Electric Co., Cleveland, who designed many of its power industrial trucks, recently passed on. He was director of engineering when he retired in 1946. Cochran received his engineering degree from Case School of Applied Science in 1902. His long experience with the company began four years before the invention of the power truck, when Elwell-Parker motors were manufactured for electric passenger vehicles and battery powered motor trucks. The original Elwell-Parker Electric Co. was founded 57 years ago, this being one of the longest continuously operating manufacturing companies in Cleveland. Mr. Cochran's 44 years encompassed all but 13 of its activities.

UNION Steel Products Co., Albion, Michigan, has appointed William O. Murphy to the post of sales manager of the Materials Handling Equipment Division. He will direct the company's activities in the sale of steel-wire pallets, Palletainers and other materials handling equipment.

TWO recent appointments in the general sales department have been announced by Philip Hill, general sales manager for the Hyster Co., manufacturers of industrial trucks and auxiliary tractor tools. Harold R. Lucas, Jr., is now an assistant to the general sales manager, who has 12 years' experience in merchandising for Fred Meyer, Inc. In charge of demonstrations of the Hyster Grid Roller, an earth compaction and black-top salvage tool, is Henry Benit, assistant to Richard Stiegele. For 14 years previously Benit was employed by the Gardner-Byrne Construction Company of California.

THE appointment of Douglas A. Kuhna as chief engineer of the J. N. Fauver Co., Inc., Detroit, Michigan, has been announced by John N. Fauver, president.

"One today is worth two tomorrows."

—Ben Franklin's Almanac, 1757

Until crystal balls become standard equipment for ye Board of Directors, there is no substitute for a nice profit showing on ye quarterly statement.

—Acme Steel Notebook, 1950*

Thrift and efficiency belong in business—not alone because they are good, solid business virtues.

They can also mean the difference between profit and loss.

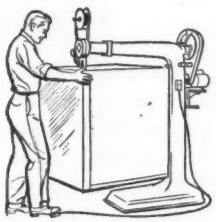
Helping business to greater thrift and improved efficiency has been the reason for Acme Steel methods and Acme Steel products for more than 70 years. We are now working with more than 50,000 customers representing almost every industry, particularly in departments and operations concerned with packaging, shipping, materials handling.

If you would like to learn more about Acme Steel products and how they may be able to help you, write on your business letterhead and ask for free booklets on the specific products in which you are interested.

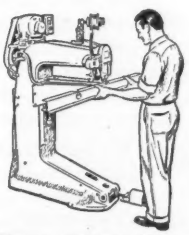
ACME STEEL COMPANY

Dept. F-100, 2838 Archer Ave., Chicago 8
There are 46 Acme Steel service offices in the principal cities of the U.S. and Canada.

**The sagest maxims of Ben Franklin, together with modern parallels, appear in Acme Steel Notebook, 1950. We have a free copy for you. Just ask for it.*



Big jobs no problem. Acme Silverstitchers are saving time, space, money, throughout the textile industry.



The heavy-duty Acme-Morrison Metal Stitcher is used extensively in assembling parts in the aircraft industry.

ACME STEEL CO. CHICAGO

ACME STEEL

Acme Steel Company has enjoyed sound, steady growth under the American business system of open competition. Since 1901 we have made 285 consecutive dividend payments to our stockholders.

ACME STEELSTRAP flat steel strapping and ACME UNIT-LOAD carload bracing BAND, SEALS and TOOLS • ACME SILVERSTITCHER machines • ACME SILVERSTITCH stitching wire • ACME-MORRISON METAL STITCHERS and BOOK STITCHERS • ACME-CHAMPION BAG STITCHERS • ACME HOT AND COLD ROLLED STRIP STEEL • ACME GALVA-BOND steel slat stock for Venetian blinds • ACME STEEL SPECIALTIES, including hoops, corrugated fasteners, nail-on strapping and other container reinforcements • ACME STEEL ACCESSORIES—snips, cutters, punches, tool mounts, reel stands, coil holders, coil trays.

Circle No. 83 on Reader Service Card for more information

LAMSON *Conveyors*

SPEED assembly line production.

SPEED flow of materials.

SPEED handling of finished products.

SPEED. That's the word that best describes Lamson Conveyors. In plant after plant, Lamson Conveyors — specifically applied for specific needs — cut materials handling costs at least 30%! And that's a saving. A *big* saving.

SAVE Wasted Effort... Handling Time and Valuable Floor Space.

In the large Westinghouse Home Radio Division Plant at Sunbury, Pa., the interlocking system of Lamson Conveyors eliminates bottlenecks . . . saves wasted effort . . . and many handling costs.

In the main illustration, radio receivers literally "roll" up to the inspectors on the lower conveyor line. After rigid inspection, they go to the cabinet section for installation and final inspection via the overhead Lamson Conveyors.

No wasted time. No wasted effort. No wasted footsteps.

***Mail* this coupon today for Free Booklet!**

Read how Lamson Conveyors can cut your handling costs up to 30%!

Lamson Corporation
1300 Lamson Street
Syracuse 1, New York

Please send me further information about your CONVEYORS.

I am interested in moving _____
(Type of product or material)

Name .....

Position .....

Company ..... **Address** .....

Circle No. 84 on Reader Service Card for more information

RICHARD M. Friddle and Richard A. Frazee have been assigned to Allis-Chalmers Cleveland and St. Louis district offices respectively as sales representatives. An electrical engineer, Friddle joined Allis-Chalmers in 1948 shortly after graduating from the University of Colorado. Frazee is a mechanical engineering graduate of the University of Oklahoma. He came with Allis-Chalmers in 1948.

IVAN E. Howard, hydraulics and lubrication engineer, has been named regional supervisor for the Clark Equipment Co.'s Industrial Truck Division in the South Central territories. His headquarters will be in Peoria, Illinois. Five Clark Dealers operate within Howard's region: Arst Equipment Co., Tulsa, Oklahoma; T. G. Frazee, with offices in Dallas and Houston, Texas; Lift Truck Sales and Service, Kansas City, Missouri; Materials Handling Equipment Corp., St. Louis, Missouri; Fred J. Vandemark Co., Memphis, Tennessee.

L. C. DANIELS, formerly chief engineer for the Towmotor Co., Cleveland, has joined the Buda Co. in the capacity of vice president in charge of Material Handling Division. Daniels' experience consists of 20 years as experimental engineer and sales representative for the White Motor Company, Cleveland. He has also been associated with the Twin Coach Co., Kent, Ohio, and the Cleveland Tractor Co., in addition to Towmotor.

C. E. HOUSTON has been appointed manager of the recently opened retail store for Hyster industrial trucks in Peoria, Illinois, according to C. H. Collier, Jr., eastern sales manager for Hyster. Houston has been connected with Hyster for a number of years in various sales positions, including sales promotional work, retail sales management, expediting, and district sales management. The new store has an area of 5400 sq. ft., including offices, a showroom, parts department and complete servicing facilities. Houston is assisted by a staff of 12 in supervising sales in a territory comprising most of Nebraska, all of Iowa and northern Illinois.

Hamilton Merrill, a vice president and director of Manning, Maxwell & Moore, Inc., New York, has been elected president of the company. The announcement was made by Colby M. Chester, chairman of the board of directors. Merrill succeeds Robert Ross Wason, who died recently. Merrill became associated with MM&M in 1920 as assistant works manager. In 1928 he became works manager of the Bridgeport plant; he was made a vice president in 1937 and was elected to the board of directors in 1949. In May of this year he was appointed vice president in charge of the Consolidated-Ashcroft-Hancock Division of the company. Chester H. Butterfield, vice president of Manning, Maxwell & Moore, Inc., has now been named vice president of this division.

M. W. HEINRITZ, formerly vice president of Gould Storage Battery Corp., was elected vice president in charge of industrial sales of Gould-National Batteries, Inc., at the annual meeting of the company held in St. Paul.

THE opening of a district office of the Philadelphia Division of the Yale & Towne Manufacturing Co., to serve industry in Cleveland and Northern Ohio, has been announced by Sam W. Gibb, general sales manager. The office, located at 2157 Superior Avenue, Cleveland, has complete sales and service facilities for Yale lines of industrial trucks and hoists. Douglas Darnell, district sales manager, will be in charge of the new office. He will be assisted by a sales and service staff with long experience in the application and maintenance of material handling machinery.

WILSHIRE APPOINTS MADDEN EQUIPMENT

THE Madden Equipment Company, 4312 So. Paulina street, specialists in materials handling equipment in the Chicago area, announce their appointment on an exclusive basis by the Wilshire Power Sweeper Company of Los Angeles, California.

In order to devote more time to the sale and distribution of Wilshire sweepers, the Madden Equipment Company is discontinuing the sale of Towmotor fork trucks which they have sold in the Chicago area during the past five and one-half years.

The "TOTEMASTER"

POWERED BY A 20 H.P., 4 CYLINDER GAS ENGINE

Indoors or out — this rugged ONE-TON Toter scoots around with loads up to capacity and at speeds up to 20 M.P.H.

- Crosley 4 cylinder engine — 20 HP, CI block — 5 main bearings.
- High compression engine — Ratio 7.8:1. More complete combustion means reduced fuel and less fumes.
- Electric starting. No cranking, therefore operator will stop engine while loading truck. Saves fuel and reduces fumes.
- 3 speeds forward — 1 reverse. Saves strain on engine. Increases grade performance with heavy loads. Lowers maintenance cost.
- Two wheel drive — differential. More effective traction. Less wear and tear.
- Water cooled engine — quiet and cooler.
- Hydraulic brakes — airplane type.
- Double handle grip provides one or two hand steering.
- When operator leaves seat, parking brake is mechanically applied.

MULTIPLY MANPOWER LEWIS-SHEPARD

The "MASTER" Line ®

21 Sq. Ft. of Loading Space . . . . Draw Bar Pull: 1200 lbs.
WRITE for "TOTEMASTER" Bulletin #30

DON'T DELAY WRITE TODAY

LEWIS-SHEPARD
PRODUCTS INC.
WATERTOWN, MASS. CRAWFORDSVILLE, IND.
REPRESENTATIVES IN PRINCIPAL CITIES

LEWIS-SHEPARD PRODUCTS INC.
115 Walnut Street Watertown 72, Mass.
Please send me "TOTEMASTER" Bulletin #30

Name .....
Firm .....
Address .....
City..... Zone..... State.....

Mfrs. of The "MASTER" Line of Materials Handling Equipment
Circle No. 85 on Reader Service Card for more information

Learn How You Can Cut Direct Labor Costs by 20% and More!

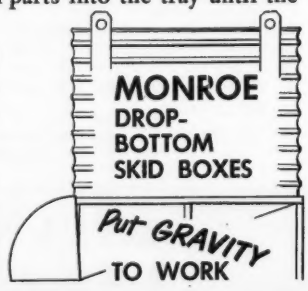
Get this CATALOG

By keeping small parts always accessible to machine operators and assembly line workers, Monroe Drop-Bottom Skid Boxes eliminate stooping, bending and other waste motion. With handling thus speeded, many customers report savings of 20% and more in direct labor costs.

A hand lever releases the hinged bottom of the box to a slanting position, sliding stampings, forgings and other parts into a waist-high tray of the matching work stand. Gravity maintains a replenishing flow of parts into the tray until the box has been emptied.

Monroe Drop-Bottom Skid Boxes are easily removed or replaced on production lines by conventional high lift trucks.

It will really pay you to investigate how you can put gravity to work—with Monroe Drop-Bottom Skid Boxes.



Send Coupon for Free Catalog

MONROE AUTO EQUIPMENT CO., MONROE, MICH.

Gentlemen: Please send me your free catalog on the Monroe Drop-Bottom Skid Box.

NAME.....

FIRM.....

ADDRESS.....

CITY.....STATE.....

Circle No. 86 on Reader Service Card for more information

CONVEYOR PAYS FOR ITSELF . . .

(Continued from page 26)

by elevator to shipping. This flow conflicted with the heavy volume of in-process parts and raw materials which were handled on the same elevators for the entire assemblies on two shifts.

Waiting time was one evil; this entailed congestion at the elevators and a shortage of skid platforms and other load carriers. Effective manufacturing space was lost because of loads wating to be transferred. Not infrequently, operators with loads would go from the south elevator on the third floor to the one at the north end, and after arriving on the second floor, they would go back to the loading area in the south ennd. With a distance of 350 ft. between elevators, the wasting of 700 ft. of man-travel was no unusual occurrence.

In a study made to correct the inter-floor flow of materials, it was decided that an overhead chain-type conveyor would be the most advantageous handling tool. The reasons for favoring a conveyor were as follows. It would transport the bundles or sub-assemblies through cleaning, painting, drying; it would get these parts off the floor, give the necessary storage capacity and set the materials down on the shipping dock.

Since in all these moves the elevators would be by-passed, the elevators would be available for transfer of raw materials and in-process parts, thus serving the main production function.

Important "Incidental" Advantages

The conveyor subsequently installed, a closed circuit of 1760 lineal ft., was of #458 chain, with hooks on 24" centers. The continuous conveyor method brought unexpected advantages, which is usually the case when comprehensive improvement projects are instituted. For example, the grain elevator (up to 10 ft. long) on a combine originally had wood separators in it. Because of this fact,

these units had to be individually cleaned, spray painted and then delivered to the shipping area.

Owing to the fact that we put in a hot alkali wash and a flow-coat system in connection with the continuous conveyor system, we redesigned this grain elevator by replacing the wooden separators with those of steel, and changed the flights from steel to rubber. These changes made it possible for us to load the elevators on the conveyor system, which in turn transported them through a hot alkali cleaning bath, painting, drying, and thence to shipping.

Layout for Efficient Flow

The operational pattern can be followed conveniently by reference to the flow chart. The finished bundle or sub-assembly travels down to the second-floor shipping area. The conveyor unloading station is part of the shipping floor.

Certain procedures are followed in unloading the components. Before they are taken off, a number is stencilled on each bundle (for identification). As the bundles are removed, they are stored at right angles to the conveyor. This applies particularly to the longer items; short ones are usually placed on pallets. In any event, the method provides that "first" items will be spotted alongside the depressed railroad track on which the outbound flatcars are spotted.

The main assembly is hauled by industrial tractor and spotted on the flatcar for blocking. The larger bundles or single prime items will be picked up by fork truck and loaded with the proper assembly. Components that are especially bulky are handled with a boom attachment on the truck.

While the parts for each model are varied, all travel on the same conveyor by use of simple S-shaped hooks made up in various sizes. Conveyor handling has also made it possible to simplify the production layout. With the main assembly operation taking place on the shipping floor level (the second), we concentrated our sheet metal fabrication to the first and

IT'S HERE!

...THE "CARRIER" STEEL MEN ASK FOR!

ROSS Series 100

***NOW* STEEL MILLS CAN TAKE ADVANTAGE OF STRADDLE CARRIER MATERIALS-HANDLING . . . SMASH BOTTLE NECKS INHERENT IN ORDINARY METHODS!**

Ross Series 100 . . . The *Only* Straddle Carrier Designed and Built for Rough, Tough Steel Mill Service!

It's Rugged, It's Tough . . . Has That Great Reserve Strength Steel men Want!

It's Self-Loading, Unloading . . . Only a Driver Needed!

Handles 45,000 Lb. Payloads, Speeds to 33 MPH Forward or Reverse!

LOOK AT THESE ADVANTAGES OF CARRIER HANDLING!

Simplest known method for moving billets, bars, in process and finished materials . . . *where* needed *when* needed, at a moment's notice.

Frees steel mills from restrictions of plant railroad handling systems.

Eliminates need for expensive trackage, cars, locomotives . . . costly, time-consuming switching operations.

Prevents congestion in the mill . . . eliminates costly re-handling . . . saves time and money in getting out current orders . . . frees more mill space for production operations.

Don't overlook the outstanding advantages of *the simplest mass handling method known!* Get full details on Ross Series 100 Carrier. A 'phone call, wire or letter will do it!

Rely On ROSS

THE ROSS CARRIER COMPANY
280 Miller Street, Benton Harbor, Michigan, U. S. A.
Direct Factory Branches and Distributors Throughout the World

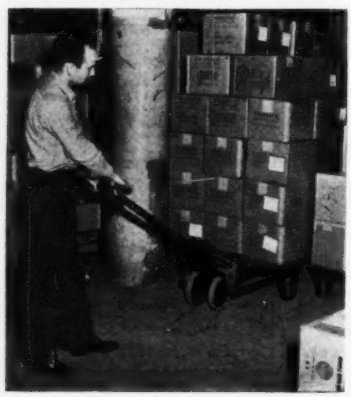
Circle No. 87 on Reader Service Card for more information

How To Double Warehouse Capacity

ONE OF THE 50 stock selection bays which are numbered and lettered for simplified control.

INCOMING GOODS are skidded, then hand-trucked to second-floor storage or order selection.

CASES ARE placed on designated skid. Slips on each case contain shipping information.



WHEN you have a warehouse supposedly operating at full capacity in supplying 44 retail outlets, and almost overnight require it to supply merchandise for 88 outlets, the immediate expansion move is bound to entail a flow engineering program of some scope. This was the experience of The Gray Drug Stores, Inc., Cleveland, which expanded its chain to twice the original size several years ago.

The best answer was thought to be the construction of a new warehouse adjoining the old one. A study of building costs and rent of the land revealed that the project would cost the company approximately $25,000 a year in non-productive overhead alone. Consequently, other avenues were explored.

Before: Non-Adjustable Racks Waste Space

Company officials and consulting engineers emerged from extensive studies with a plan that not only met the increased demand satisfactorily, but also effected far smoother storage, order picking and shipping methods than were in operation when less goods were handled.

Earlier, non-adjustable wooden racks were used throughout the warehouse. Merchandise ranging from two to 14 ins. in height was stored in the same vertical area.

After: Adjustable Racks Save Space

Specific improvements are:

1. The installation of adjustable racks in order selection areas has greatly increased total storage space.

2. Relocation of storage areas has meant better utilization of vertical space. The basement, with a lower ceiling, is delegated to order picking.

4. An improved stock location card system has speeded selection.

5. The construction of a new truck dock accommodating 14 vehicles has increased production in receiving and shipping.

6. The dock is equally divided between shipping and receiving functions, eliminating confusion and leakage.

Hand Truck—Skid System

Incoming goods are immediately skidded, checked and hand-trucked to the 3500-lb. capacity elevator for movement to the second floor storage area. Some reserve stock is also located on the first floor, but the larger part of this level is devoted to general offices, shipping and receiving.

In the reserve stock areas, goods are stacked to ceiling limits.

AT BRAINARD *When we say Service...*

...We Mean it!

Here at Brainard we take our service seriously. The **Brainard Strapping System** is designed to take care of all your packaging and shipping requirements from A to Z.

With the Brainard Strapping System operating in your plant you can be sure your packaging and shipping operations are functioning at top efficiency at all times.

If you're not sure you are getting the most for your packaging dollar call in the experienced Brainard man nearest you. Don't continue losing time and money — call today — there's no obligation, whatsoever.

Brainard Engineers Know Their Business

Constant service to all customers is part of the Brainard Strapping System. Qualified engineers like Andy Adamson, left, and Jack Boyer, right, whose experience totals more than 40 years, see to it that Brainard customers are always up-to-date with complete engineering, technical, and supply service for any type packaging operation.

BRAINARD SERVICE INFORMATION CENTERS IN THESE CITIES

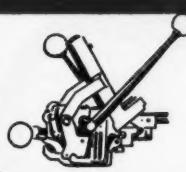
Chicago, Detroit, Cleveland, New York, Grand Rapids, Cincinnati, Pittsburgh, Philadelphia, Atlanta, Buffalo, Rochester, Nashua (N. H.), Winterhaven (Fla.), Kansas City (Mo.), St. Louis, Denver, Omaha, Des Moines, Nashville, Indianapolis, Minneapolis, San Francisco, Dallas, Memphis, Fort Wayne, El Paso, Albuquerque, Warren (Ohio)

STEEL STRAPPING DIVISION
BRAINARD STEEL COMPANY
21310 Larchmont Ave. Warren, Ohio

SHARONSTEEL

BRAINARD MANUFACTURES STRAPPING TOOLS TO FACILITATE PACKAGING AND SHIPPING ON PRODUCTION LINES.

BRAINARD HELPS DEVELOP PERFECT PACKAGING FOR ANY PRODUCT.



BRAINARD WORKS OUT SPECIAL TOOLS AND STRAPPING WHERE NEEDED.

BRAINARD BETTER UTILIZES CAPACITY OF EVERY CAR AND TRUCK.

BRAINARD MAINTAINS ALL STRAPPING EQUIPMENT IN PERFECT WORKING ORDER.

Circle No. 88 on Reader Service Card for more information

Aisles are designed for hand-truck travel; these also provide extra on-the-floor storage space for seasonal goods, such as those stocked for special sales.

The basement totals approximately 20,000 sq. ft. and is divided into six departments according to merchandise in the stores:

The company faces the constant problem of rotation of goods. Care is exercised to insert new merchandise behind the older units on both the selection floor and reserve stock areas.

Three Types of Racks

There are three types of racks in the selection area. 1. Fully adjustable racks measuring 24 ins. deep and 36 ins. wide with a total height of seven ft. Bin openings vary from six to 18 ins. 2. Semi-adjustable shelf type racks, used for small units whose size seldom varies. These are 15 ins. deep, 36 ins. wide and usually set with 12-in. openings. 3. Non-adjustable racks for intermediate reserve stock which measure 36"x36"x30".

All shelves are laid out in the same order as the order selection

CRANE DISMANTLES CRANE—The Eichleay Engineering Corp., Pittsburgh, uses its 45-ton rubber-tire mounted crane to handle a 39-ton over-

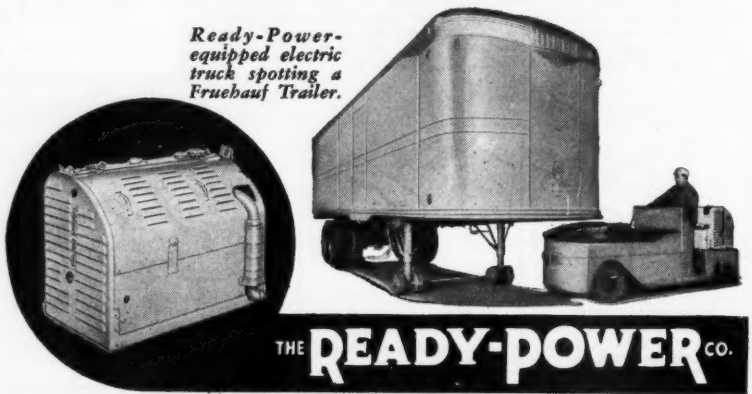
head crane beam. The job is one of dismantling a "stripper" at the blooming mill at the National Tube Co. plant, Lorain, Ohio. The overhead crane will be reconditioned and re-erected in another part of the plant as part of an expansion program.—Courtesy, Thew Shovel Co.

Ready-Power-equipped Yale Truck, stacking automobile parts.

power unlimited WITH READY-POWER

There's a world of power in Ready-Power-equipped electric trucks and it's yours in any amounts needed to handle your jobs with utmost efficiency. Ready-Power gas-electric Units generate dependable electric current, in unlimited amounts, right on the truck chassis. Keep them working as many hours as you want. They won't slow down. Equip any make truck with Ready-Power.

Ready-Power-equipped electric truck spotting a Fruehauf Trailer.



THE READY-POWER CO.

3838 Grand River Ave., Detroit 8, Michigan

Circle No. 89 on Reader Service Card for more information

lift trucks are sensitive, too

The lift truck driver who judges tires by the seat of his pants isn't far wrong, cost-wise. Mono-Cushions will save you plenty on repairs by giving your trucks (and drivers) an easier ride than any other type of industrial tire, size for size. They'll drastically reduce maintenance on steering mechanisms, bearings, differentials, universals, transmissions—any part of the truck affected by shock or shock load.

Mono-Cushions will cut costs in other ways, too. They're long-wearing, they need no servicing, and they're puncture-proof—go anywhere in the plant. They're easy on loads, easy on floors. They're stable, sure-footed.

The leading manufacturers of industrial vehicles use Mono-Cushions as original equipment. Replacement tires available through the manufacturer of your equipment or his distributors.

Mono-Cushion
INDUSTRIAL VEHICLE TIRES

TOUGH ALL THE WAY THROUGH

CUSHION ALL THE WAY THROUGH

THE
MONARCH
RUBBER COMPANY

501 LINCOLN PARK • HARTVILLE, OHIO

SPECIALISTS IN INDUSTRIAL SOLID TIRES AND MOLDED MECHANICAL RUBBER GOODS

Circle No. 90 on Reader Service Card for more information

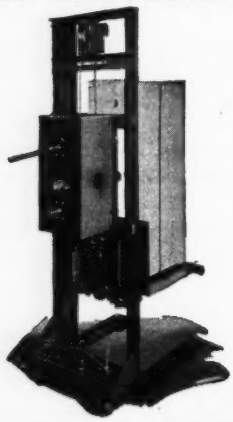
You don't need a steam shovel to plant a petunia.

And you don't need expensive, heavy, ride-around power machinery for simple lifting and piling.

Revolvator Portable Elevators are your answer for ordinary loading and unloading, piling and stacking, positioning, servicing ceilings, etc.

Operated by electric power, or by hand for occasional use or where current is not available.

THE UPLIFTER PORTABLE ELEVATOR



A very popular light weight hand elevator for handling materials up to 1000 lb.

Weight only 415 lb.
Compact Extreme Lift 62"—will operate in narrow aisles
Safe Governor lowering—and same 2 speed hoist as on heavier capacity models.

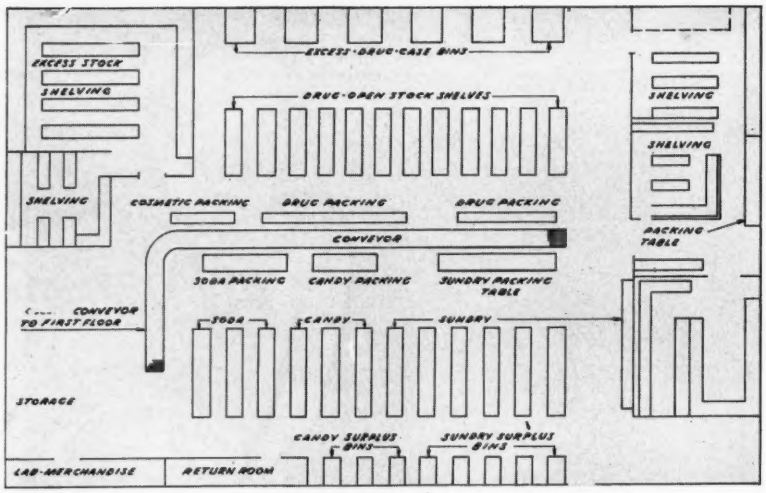
Other Standard Elevator Models For Varying Needs. Write for details.

Also manufacturers of the famous GO-GETTER Power Liftruck, Hydraulic and Traction elevators, and other material handling equipment.

REVOLVATOR CO.
DESIGNERS AND MANUFACTURERS OF MATERIAL HANDLING EQUIPMENT

1739 Tonnele Ave. North Bergen, N. J.

Circle No. 91 on Reader Service Card



DEPARTMENTS are shown in relation to conveyor, so located to minimize travel.

sheet, which also applies to the stock arrangement on the individual shelves. An operator enters a bay and works up and down the shelves in ascending, then descending order throughout the bay, then up the next bay.

Flexible Packing Operations

Daily shipments often total 400 to 600 cartons to each of as many as 18 stores.

The outgoing containers are marked according to the department in the stores (by means of colored tape and/or crayons), and a shipping slip. The cases are sent via the conveyor to the first-floor accumulation area. The rollers feed to a booster belt, then an inclined belt for inter-floor travel.

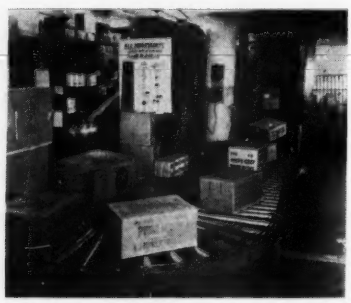
The inclined belt discharges on a 20-ft.-long gravity roller conveyor from which operators place the orders on skids. Full case orders from reserve stock floors are also accumulated here. Route slips aid these operators in assembling orders. When the last case comes from packing (a slip shows the shipment is completed), the loaded skids are hand-trucked about 20-ft. to a point adjacent to the shipping dock.

The entire selection and shipping schedule is predicated on a system set up by the company and described as follows.

"Since the warehouse is on a fixed schedule of delivery to the stores, it is important that all departments fill the orders in the same store sequence and at approximately the same time. No department should go ahead since this doubles handling in the accumulation department. If departments fall behind, orders cannot be completed, resulting in costly merchandise shortages in the stores and expensive waiting time for trucks."

PACKING STATIONS along powered roller conveyor. On either side are the selection racks.

ROLLERS DELIVER outgoing cased goods to inclined belt which feeds to accumulation area.



2-WAY RADIO . . .
(Continued from page 38)

spotted about the plant. The supposition was that the driver of an empty truck would sooner or later come in sight of one of the lights and then stop for orders at the office. The underlying inadequacy of this method is glaringly revealed by the fact that some of our trucks were operating only 20 per cent of scheduled time.

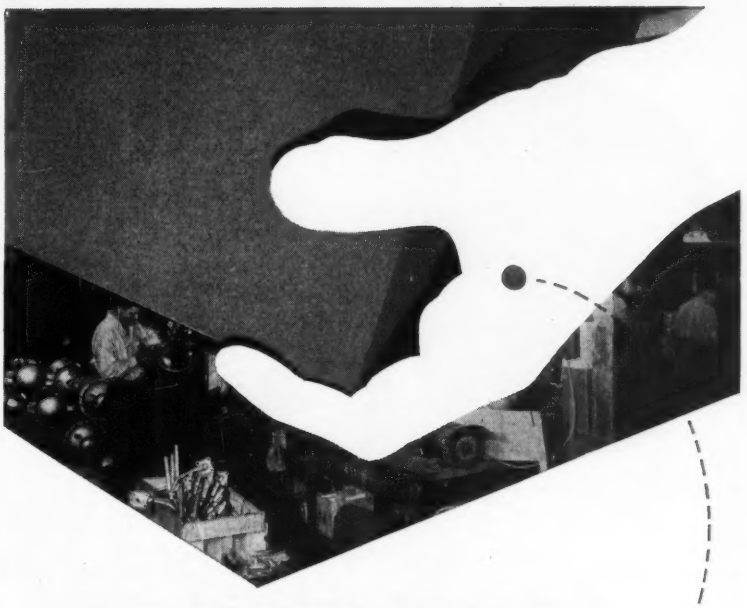
Radio Installed

The radio equipment was installed in March of 1950. (Realization of the plan was delayed somewhat by the wait for FCC to issue the license. This government agency passes on the need for the equipment and determines the wave length. FCC does not move fast. An applicant must prove to FCC that the radio is essential to his production. All operators at the main station have to be licensed by the agency, which issues a restricted radiotelephone operator permit.) Each truck of the fleet not assigned to special duty was equipped with a receiver and transmitter.

Of the 24 trucks we operate a few are assigned to repetitive jobs in confined quarters. These few units are not radio-equipped. This also applies to seven trucks, not under our central jurisdiction, which are used exclusively by the millwright department for maintenance purposes and for moving machinery.

The receiver and transmitter is mounted back of the driver's seat. The receiver is on at all times so that all truck operators can hear all communications from the main station, which is located in a shop office. When an operator is called he merely drops his free hand to one side to pick up the microphone. The operator thus keeps a hand on the truck control and his eyes in the direction of travel. Communication with the central dispatcher has thus been made a SAFE operation.

The value of all drivers being able to hear all communications



ALVEYORS

ALVEY CONVEYORS

take the "hand"

out of handling!

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GRAVITY ROLLER CONVEYORS
CHAIN CONVEYORS
APRON CONVEYORS
INCLINED CONVEYORS
DECLINED CONVEYORS
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WHEEL CONVEYORS
BELT TABLE CONVEYORS
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VERTICAL CONVEYORS

Too many hands make too-costly production. Take them out of the package handling picture. Turn the job over to Alveyors.

Alveyors convey more packages at lower cost because they are designed for the specific handling job—engineered to cut waste motion, to eliminate manhandling wherever modern conveying can do the job better.

Systems engineered by Alvey specialists through the past third of a century have taken hands out of handling, have resulted in greater efficiency, reduced loss from injuries. In many plants Alveyors integrated operations that seemed to defy simplification.

Let this experience guide you as you evaluate your package handling methods. Write or phone. There is no obligation.

ALVEY CONVEYOR MFG. CO.

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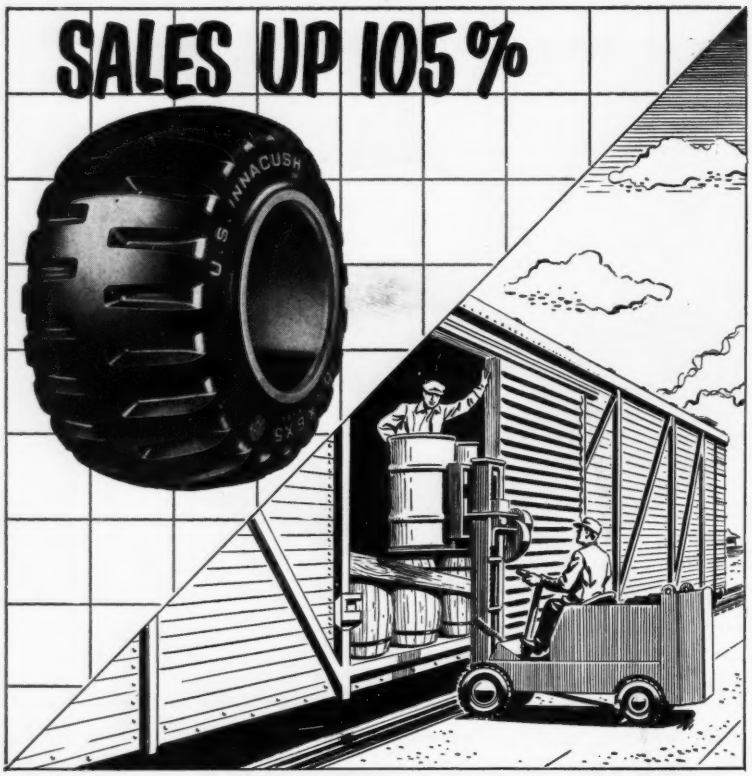

Why Do So Many "Supers" Prefer U. S. INNACUSH?

Sales prove smart plant "supers" have gone all out for U. S. Innacush . . . for every materials handling job requiring industrial trucks. Why?

Look What You Get with U. S. INNACUSH:

- ★ Maximum vibration dampening *with* minimum rolling resistance.
- ★ More sharp lug surfaces for efficient traction and easy steering.
- ★ Greater tread thickness for long service.
- ★ Cut-resistant tread compound all the way through.
- ★ Higher carrying capacity.
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- ★ *Definite* reduction in operator fatigue.

U. S. Innacush is available in a complete range of sizes for almost every industrial truck, and is only one type in a complete line of U. S. Industrial Tires ready to serve your materials handling needs.

Your U. S. Royal Distributor can show you how the U. S. Innacush and the entire U. S. Industrial Tire line will save you money, and how his on-the-spot service will cut your "down time" costs. He's in the Classified Telephone Book —call him today.

U. S. ROYALS

***a product of* UNITED STATES RUBBER COMPANY**

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can hardly be overstressed. Several distinct advantages can be listed. Many times a driver other than the one being called is closer to the job and will speak up to say that he can take care of the load. That's how the percentage of running time is kept high.

Or, there is a need for more than one truck to move a load; in such cases, too, truck operators will call in to say that they are able to help out. Again, when a production bottleneck develops and large quantities of material must be moved in a short time, the situation can be remedied promptly. The immediate nature of radio communications brings help in a few minutes.

With the radio communication system, the trucks usually reach their destination in two minutes. The centralized material handling department is able to give regularly a two-minute service as compared with the 20 to 30 minutes it required with the flasher system. When service was dependent on such long waiting periods, correspondingly larger banks were required to keep operating. Now the banks can be held to a minimum and production bottlenecks compounded in subsequent operations are a thing of the past.

As far as incoming highway trucks are concerned, there is usually no control over their number. But by means of a two-way radio system a half dozen operators with their vehicles can be "switched" (when necessary) to take care of arriving materials. The same is true of shipping. Schedules often change—and the two-way radio system is the one tool that can keep up with such quick changes: men and machines can be moved at a moment's notice as required by the material flow.

(In next month's concluding installment Author Moore discusses the records that are kept, and explains the importance of the engine hour recorders which are the watchdogs of the maintenance program. He also gives other revealing insights into the impressive advantages which were made possible by modern communications.—Ed.)

OLDSMOBILE DOES IT . . .

(Continued from page 53)

which 18 are line conveyors and the remainder used for feeding components to the main lines.

Everything Moves

The first section of the final assembly conveyor (#1) is 571 ft. long. At 21-ft. intervals inverted angles are welded to the flat steel plates which form the carrying surface. The angles catch the rear wheels of the chassis as it is delivered from the overhead carrier and hold them in place as the chassis moves down the line.

There are no fixed stations along the line. For such operations as wheel alignment and headlamp aiming, fixtures and tools are mounted over the assembly conveyor and connected to it.

Cars are spaced so that they are accessible from all sides. This allows operators to move quickly to any part of the vehicle. There is no congestion; tools are easily manipulated; there is a minimum of spillage of small items and operators do not get into each other's way. These are major factors in the speed with which vehicles are assembled and are thus directly responsible for the high hourly output.

How Cars Are Transferred

At the end of the first line the cars must be moved sideways to reach the second section of the assembly line (Conveyor #3). This must be done without slowing the flow on the first line. For this reason, the transfer system is synchronized with both main lines for proper spacing of the automobiles.

Cars are transferred sideways and travel one-half the car spacing on Conveyor 1. When the second section of the final assembly conveyor is in position to accept a

The Story of an Unhappy Company President

(with a happy ending)

Once upon a time there was a Company President.

He had a nice little organization that did a couple of million bucks worth of business a year. Or used to. But things were getting tough. He was having trouble making deliveries on schedule. What's more, profits were getting smaller and smaller each month.

And the stockholders were all upset. No dividends.

The Company President was getting unhappier and unhappier. Finally he got mad. "I'm going to find out what in the blank blank is wrong with this blank blank place right now!" he yelled to himself. (Practically scared his secretary to death!)

So, he started through the plant. He saw men lifting big boxes and heavy cartons. He saw how slowly highway trucks and railroad cars were being unloaded. He saw wasted time where the production line was waiting for materials.

Boy, if *that* didn't start him thinking, though! He rushed back into his office and phoned a battery-electric truck salesman who had been recommending trucks for umpteen years. "Come on over here right now and help me straighten out this blank blank situation!" bellowed the Company President.

Quick as a wink, that truck salesman was there, and together they went through the plant. The salesman showed the Company President how battery-electric trucks would save time, cut out delays, make work easier for the employees, and save money in the long run.

He told the Company President how clean the trucks were, no fumes, no dirt; how dependable they were, a minimum of maintenance, low-cost operation; how safe they were, how easy to operate.

Well, the company bought four trucks. Everything the salesman promised came true. The Company President got very happy. Business picked up. Orders were delivered on time. Profits climbed. The stockholders at the next Annual Meeting

elected the Company President Chairman of the Board, too! And they all lived happily ever after.

Have YOU taken a good look at your material-handling situation lately? Is it in blank blank shape? Are you unhappy? Our new "Handbook of Material Handling with Industrial Trucks" will help solve your blank blank problems. It costs $1, but responsible company officials will get a copy *free* by writing us a request on company stationery.

The Electric Industrial Truck Association

3701-C NORTH BROAD STREET • PHILADELPHIA 40, PENNSYLVANIA

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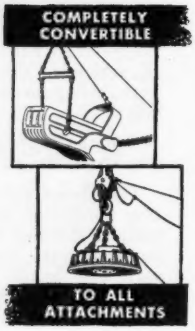
Built by modern precision methods, the UNIT 1520 leads the field in quality, and dependable performance. Designed for both "on and off" highway operation. So compact, it works efficiently even in small, cramped quarters, "in or out" of the yard.

- Rugged Construction
- Perfectly Balanced
- Hook Roller Construction
- Operated by ONE Man
- Powered by ONE Engine
- Hydraulic Steering
- Air Brakes and 4 Speed Air-Actuated Transmission
- Heavy Duty, yet operated with remarkable SPEED . . . SAFETY . . . ECONOMY!



UNIT 1520 can be equipped with retractable high A-Frame to permit capacity loads on extended boom at long radius.

UNIT CRANE & SHOVEL CORPORATION
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SHOVELS • DRAGLINES • CLAMSHELLS
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car, the transfer line again moves, depositing a car.

A second transfer station (Conveyor 4) is located at the end of Conveyor 3, and holds three cars. When filled, operators drive them either forward or backward onto test rolls (Figure C). This is the first time any personnel is responsible for movement of the Oldsmobile cars. Two identical sets of rolls are used so that the transfer line does not become crowded. When one set of rolls is in use, the other set is open to receive three other vehicles.

After testing, the cars on the front rolls are driven forward onto another lateral conveyor (#5). The vehicles on the rear rolls are reversed onto a similar carrier (#6). These automatically deliver to two parallel adjustment conveyors and are then driven to the stationary adjustment area or onto one of the inspection and paint conveyors.

Synchronizing 42 Conveyors

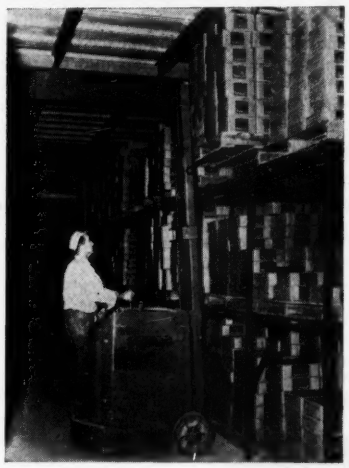
With the exception of these last paint conveyors, all carriers in the system are controlled from a central board which has 200 indicating lights, Figure E. A diagram of the system is outlined in white on the panel and the flow of the cars is easily controlled by rheostats located on the panel. While one central rheostat controls the movement of all conveyors, each one may also be regulated separately if desired. In addition to the diagram on the central control board, two duplicate boards are hung from the ceiling where they are visible to assembly personnel. There are 12 shut-off switches located along the conveyor system. If one switch is actuated, all assembly lines stop. Foremen can immediately spot the location of the trouble from a corresponding light on the control board. The lines cannot be started until the same switch is turned on again. This eliminates the danger of lines starting while personnel are working on one of the conveyors and also prevents cars from

piling up if feeding to a "down" conveyor.

Since automobiles manufactured by Oldsmobile have two different wheel bases, all floor conveyors are designed with wide top plates. All transfer conveyors have one wide plate to compensate for the different lengths of the cars.

This conveyor system, which represents an investment of several million dollars, can be immediately adapted to future models without a single expected change in the existing system.

Better Use of Manpower — When John Lucas & Company, Inc., Philadelphia, paint and varnish manufacturers, built a new warehouse at its Gibbsboro, N. J., factory, it installed fork trucks to handle material in palletized load units. The picture shows one of these trucks tiering a palletized



unit load atop of a series of special structural steel racks erected in the new building. Note the narrow turning radius of the truck which has enhanced its value even more. Since installation of the fork truck-pallet system, man-hours required for warehousing-shipping operations have been radically reduced, while outbound tonnage handled in a week has been increased by some 55 per cent. Manpower relieved from manual warehousing duties was assigned to work of production. This reassigned labor enabled the Gibbsboro factory to absorb production work from other overloaded plants. Courtesy, Electric Industrial Truck Association.

Right Angle Tiers 4 ft. Pallet Loads *from 6 ft. Aisles!*

LYON-Raymond

New SPACEmaker

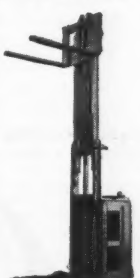
Electric Tiering Truck

You'll have to see it to believe it! The new Lyon-Raymond SpaceMaker actually positions for right angle stacking in aisles narrower than its length *including load*. Does it so easily that anyone can maneuver it. No other tiering truck does anything like it—it's the result of an entirely new design concept —and it means you can utilize up to 40% more of your aisle space for additional storage. Here's why—

SHORTEST LENGTH *ever* — eliminates counterweight space. Load stabilized by ingenious four-point wheel locations.

GREATEST MANEUVERABILITY *ever* — easiest and speediest in tight quarters through 200° turning arc of offset drive wheel. Spring mounted swivel caster compensates offset drive.

LIGHTEST WEIGHT *ever* — makes possible tiering operations on low-capacity floors. Safe floor-to-floor traffic via small, low-capacity elevators.



Straddle Type, Telescopic

Models for tiering single- or double-face pallets; skid platforms. Get complete information! Learn about the many cost-saving applications never before possible with a tiering truck! *Write today for Bulletin 701.*

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Electric Power Trucks . . . Skid and Pallet Lifts
Hydraulic Elevating Equipment
Positioning . . . Sheet and Die Handling

3332 Madison St.
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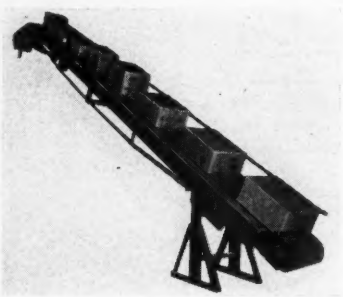
NEW PRODUCTS

For additional information on these products, write Dept. 5, Flow Magazine, 1240 Ontario St., Cleveland 13, or use postcard bound into this issue.

The Coffing Hoist Co. is offering the Mighty Midget, a hand-operated hoist or puller which weighs 9½ lb. yet takes up less than a ft. of space. It handles a full 1000-lb. load on any lifting, stretching or pulling job. It is designed as a production and a general shop maintenance tool for lifting heavy dies and castings, and holding them in place for welding, installing equipment, loading and unloading trucks, plus many other odd lifting and pulling jobs. The handle may be used as a straight lever when loads are especially heavy, or where lack of headroom allows only partial strokes; or the lower section may be locked at right angles to the upper section, forming a crank for high-speed lifting or pulling.

Circle No. 97 on Reader Service Card for more information

Cleated belt conveyor—Inter-floor movement of goods is said to be speeded by use of a Cleated Floor-Veyor, manufactured by The Rapids-Standard Co., Inc. The permanently-mounted power belt conveyor is designed to transport rough or smooth-surfaced cartons, bags, crates and other materials at inclines up to 45°. It is able to operate in crowded areas to allow maximum use of floor space. The equipment has a 10-gauge steel box-channel bed, rigidly cross-braced and trussed to prevent deflection under heavy loads. Manufactured in four belt widths from 12 to 24 ins., it is available with either slider or wheel bed in standard lengths from 10 to 40 ft. Pulley shafts operate in sealed, self-aligning ball bearings to insure smooth operation and long life.



Circle No. 99 on Reader Service Card for more information

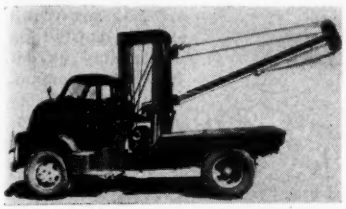
Weight recording printing device—The Howe Scale Co. has designed a device for recording load weights and is for use with the company's line of scales. It combines electronic, electrical and mechanical engineering to "read" the scale dial and convert it to weight-printings set-up on type wheels for impression on a wide variety of tickets and forms and single and double roll tapes. The unit can be installed on or near the scale dial or at any remote point 500 or more ft. away by the addition of extra cable. It is flexible and can be mounted on a desk or portable stand or built into control panels.

Circle No. 98 on Reader Service Card for more information

Hand dispenser for dispensing lengths of tough tear-resistant filament tapes has been developed by Minnesota Mining and Manufacturing Co. The all-metal unit is designed for use with "Scotch" brand filament tapes and other hard-to-cut tapes. The dispenser has a razor-sharp cutting edge. A thumb-operated trigger presses the cutting blade against the tape to make the cut. When the trigger is released the blade (which is easily changed), retracts so that it cannot cut accidentally. The dispenser can be used with tape rolls up to 72-yards in length, and accommodates tape width from ½ to 1-in.

Circle No. 100 on Reader Service Card for more information

Hydraulic truck crane—Hydra-Lift is the name of a mobile truck crane that is installed on highway trucks with practically all types of winches. It is manufactured by Pitman Mfg. Co. According to the manufacturer, hydraulic action enables an operator to pick up and spot loads without slipping or overswing. The boom swings in a 180-degree arc, with the speed of the swing regulated from the truck cab. The boom can be used for straight-line pull and when in full upright position it can be used to load and unload from the truck bed. The boom of heavy, seamless steel tubing can be telescoped from 11′ to 16′ or 20′. Capacities range up to 6000.

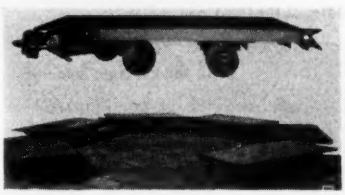


Circle No. 101 on Reader Service Card for more information

Crane cab conditioners which ventilate, heat and provide protection against dust and fumes for crane operators are offered by Dravo Corp. One type, Model VHDF, is designed to provide continuous ventilation, heating, dust filtering, and fume protection for crane cabs and small confined spaces in industrial plants. The other unit, Model VHD, performs the same functions except for fume removal. This model is intended for use where noxious fumes are not a problem but where dust filtering, ventilation or heating may be required. Fan section can be rotated 90 degrees, enabling continuous discharge of fresh air from the tops or either side. They can be installed on the cab in a horizontal, vertical or an inverted position. For cold weather operations, fresh air brought into the units is heated by electric strip heaters maintaining automatically controlled temperatures of between 68 and 72 degrees in the crane cab during winter.

Circle No. 102 on Reader Service Card for more information

Fifth-wheel trailer with automatic couplers has been developed by the Market Forge Co. It is designed for handling heavy loads or for long hauls around docks, warehouses and terminals. Its all-steel channel construction is said to withstand severe abuse with minimum maintenance. The close coupling feature automatically links the trailers 18″ apart. A special locking device keeps the fifth wheel in line and prevents jack-knifing when the trailer train backs. A 10″ stainless steel disc is used in the fifth wheel bearing and the large-size turntable and king bolt are pressure lubricated. The axles are removable. Specifications of the model are: capacity 6000 lb.; 36″ wide x 72″ long; height of deck from floor 12¾″; wheel base 30″; minimum turning radius 62″; tread width of wheels center to center 26″; four, 9″ diameter by 5″ face, easy rolling, pressed-on cushion rubber wheels with roller bearings; 2″ removable square axles.

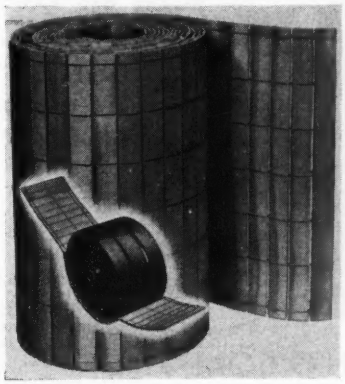


Circle No. 103 on Reader Service Card for more information

Marking pen, developed by Marsh Stencil Machine Co., is designed for marking, writing or drawing on any surface. Using fast-drying inks, black and colors, it marks on paper, wood, cartons, metal, glass, cellophane—both hot and cold surfaces. Interchangeable felt points are available in three sizes for marking fine, medium or broad lines. The barrel of the pocket-size device holds enough ink to mark a line 1/16″ wide, more than 1000 ft. long.

Circle No. 104 on Reader Service Card for more information

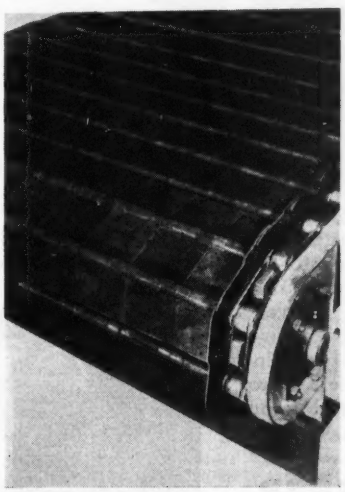
Wood-and-wire wrapping — Bulky, irregularly-shaped products are claimed to have complete protection during shipment with a strong protective wrapping that is being manufactured by the G. B. Lewis Co. The material is fabricated of wood slats woven together with wire. It may be had in any specified width from 5 to 37 ins., and rolls of 300 ft. lengths are standard. It is particularly effective in preparing heavy castings, gears, pulleys, coiled wires, cables and similar products for shipment. It can also be used for enclosing the sides of crates when a semi-enclosed sheath is advisable.



Circle No. 105 on Reader Service Card for more information

Hinged steel belting—May-Fran Engineering, Inc., has announced a hinged-steel conveyor belting which has been developed to facilitate mechanized handling of hot or highly abrasive metal parts, scrap, forgings as well as wet or dry chips, flash, etc. The precision-formed links are made from heavy-gauge steel plate and are fastened by means of high-carbon steel rods so that the side chains become an integral part of the conveyor belting.

Outside links incorporate interlocking side wings which remain positively engaged at all times, even when belting is traveling from one level to another or over the power and idler sprockets. Special link and rod design, in conjunction with the side wings, is designed to eliminate fall-through of materials handled. A wide variety of lengths and widths are available.



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Circle No. 129 on Reader Service Card for more information

Lansing Strength
Lansing Quality
Lansing Value

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ATLANTIC TRUCK
for BOXES and BAGS

- HANDY SIZE
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- HARDWOOD HANDLES

SEND FOR CATALOG

"Keep Your Products on Wheels"

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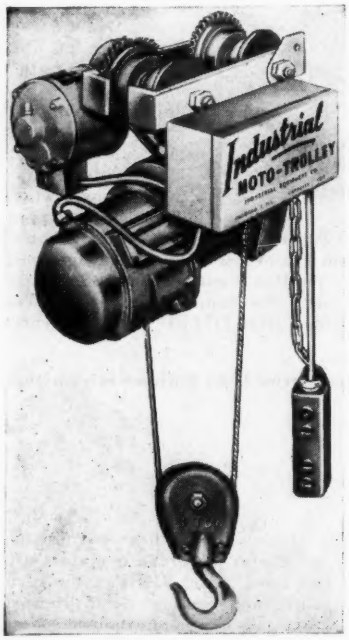
NEW YORK · Main Office and Factory: LANSING, MICHIGAN · CHICAGO · BOSTON · MINNEAPOLIS · SAN FRANCISCO · PHILADELPHIA · KANSAS CITY · LOS ANGELES

Motor driven trolley — Industrial Equipment Co. has announced the Moto-Trolley, which is designed for attachment to standard lug-mounted electric hoists and which may be adjusted to accommodate a wide variety of beam sizes. It has crown-tread machine steel wheels with hardened drivers. Each wheel is equipped with double-row precision ball bearings and a removable-head axle. The trolley is powered by a crane-duty high-torque totally enclosed motor of 30-minute, 55-degree rating. The magnetic contact panel is equipped with a transformer to reduce the voltage in the single speed push-button control circuit. A four-button control station is provided to operate the single speed trolley and hoist motions.



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LOADS UP TO 5 TONS ON HOISTS OR CRANES

HERE'S SMOOTH STARTING TRACTOR POWER for propelling hoists on monorails and cranes. The compact, efficient Calabar *fluid* Tractor starts slowly, smoothly, without jerking or swinging the load. It's applicable to flat or tapered track . . . travels at speeds ranging from 50 to 250 FPM . . . is practical on curves, inclines and awkward passages. Gears, bearings and all wearing parts are totally enclosed and operate in oil bath. End plates are removable. Control is by pendant push button. Two sizes available. Write for illustrated catalog.

CALABAR CORP.
8414 Otis Street, South Gate, Calif.

calabar FLUID TRACTORS

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IT'S EASY TO MAKE BAD FLOORS GOOD with DURA-TRED

Lay it on fast—A square foot a minute!
No Waiting to Settle—Roll over it Right Away!

"OVERWOOD PLASTICS" for wood surfaces

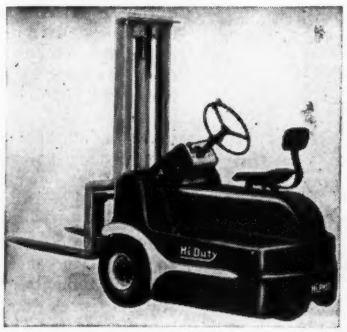
"QUICK FLOOR" for concrete and metal

Don't stop other work while renewing or patching with Dura-Tred; the sooner traffic hits Dura-Tred the sooner it packs hard, tight and smooth. Repair bad floor spots of all kinds. Lay this tough, hard coat over beat-up plank, hardwood or wood block floors. (Dura-Tred's Quick-Floor specially made for old concrete or metal floors ramps, steps, etc.) These floors take years of the roughest use, inside and outside. Don't take our word for it; see the Dura-Tred floors nearest you—talk to the men who put them in and use them. We'll be glad to tell you where to find Dura-Tred in use. Just write to

DURA-TRED
Original Floor Patcher and Surfacer Since 1938
351 N. Central Park Blvd. Chicago 24, Ill.

Circle No. 131 on Reader Service Card for more information

3000-lb. capacity fork lift truck has been announced by Transitier Truck Co. The "Hi-Duty" has a 64" turning radius and meets the need of many plants which must restrict the operation of heavier trucks, yet are forced to handle loads in the 3000-lb. bracket. The equipment has increased hydraulic capacity with single lever controls and improved steering advantages, yet retains all the features of the smaller Transitier, such as Hydroflex clutch, pneumatic tires, and extreme maneuverability.



Circle No. 108 on Reader Service Card for more information

Portable racks, engineered by Lewis-Shepard Products Inc., can be moved and set up where and when needed. Arc welded rack sections are designed for rapid assembly by means of sliding joints, with no tools required. The sections are self-nesting. Racks are made for various sizes of pallets and to suit various heights and weights of loads.

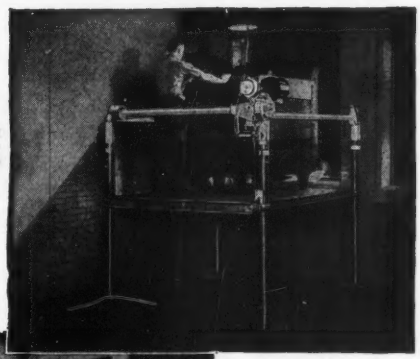
Circle No. 109 on Reader Service Card for more information

ELECTROLIFT *makes light work*

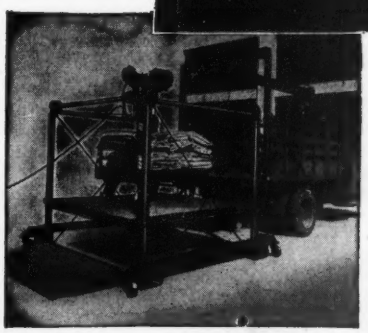
of materials-handling. One man merely presses a button to get this worm-drive electric hoist to lift loads — up to 6 tons — and move them to the desired location. ElectroLift operates quietly and with very little power. For complete information on models to meet your capacity, speed and plant layout needs, phone or write your nearby ElectroLift representative listed in the classified telephone directory. Or write to address below.

ELECTROLIFT, INC. 30 Church Street, New York 7, N. Y.

Circle No. 132 on Reader Service Card for more information



Simplifies movement of factory trucks between two floor levels



Portable model at additional cost—can be moved to facilitate loading and unloading of trucks in factory yard, etc.

Save your workers a lot of backaches—save time, trouble and money, by handling heavy loads from level to level with the new Service LEVELER. Dependably powered by a ruugged, fully-enclosed, 1 H. P. motor, it lifts as much as 6,000 pounds as high as 5 feet . . . in less than a minute. Loads, machine and operator are fully protected under all operating conditions. Outstanding safety features include: easy manual control of starting and stopping at any height; automatic top and bottom limit stops; positive motor cut-off stops; centrifugal safety governor; slack cable shut-off; post guard rings. Here's a unit that can be installed anywhere in just a few hours at amazing low cost . . . requires no sub-surface installation . . . obsoletes slow, dangerous manual handling . . . pays for itself in a very short time. *Write for detailed specifications today.*

Cost-Saving Service Materials Handling Products

Motewlift Gas-Powered Hydraulic Lift Truck | Service Hand Lifter | Service Liftable | Service Electric Hydraulic Lifter | Service Hydraulic Leverlift | Service Leveler

SERVICE CASTER & TRUCK CORP.

Executive Offices: Albion, Michigan

Plants at Albion, Michigan and Somerville 43, Mass.

SEE YOUR CLASSIFIED TELEPHONE DIRECTORY FOR NEAREST DISTRIBUTOR

Circle No. 133 on Reader Service Card for more information

Circle No. 134 on Reader Service Card for more information

Uneven Floors . . . Narrow Aisles . . . Sharp Turns . . . Heavy Loads . . . Long Hauls . . . Rough Handling . . .

there's a ® Bond Built-for-the-job CASTER

designed especially for your service needs.

36A Series—Double Ball Race Swivel Caster

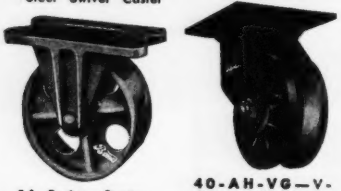
3A Series—Single Ball Race Swivel Caster

23A Series—Double Ball Race Swivel Caster

40A Series—Double Ball Race Structural Steel Swivel Caster

41A Series—Structural Steel Stationary Caster

Dual Wheel Swivel Caster



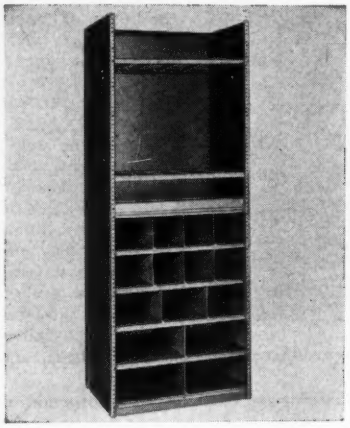
1A Series—Stationary Caster

40-AH-VG—V-Grooved Wheel Swivel Caster

● Send for catalog K-38 illustrating and describing the complete line of Bond Industrial Truck Casters.

BOND FOUNDRY & MACHINE CO.
310 Penn St.
Manheim, Pa.

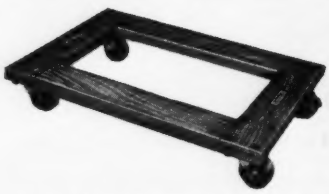
A shelving unit designed specifically for storage of long, awkward parts has been developed by the automotive shelving department of the Berger Manufacturing Division, Republic Steel Corp. Known as No. 1428, it saves expensive floor space and eliminates cluttered aisles since it stores long parts in a vertical position between dividers which are easily adjusted to meet the requirements of various sizes and types of parts. The long parts section measures 36″ wide, 48″ high and 24″ deep. Overall size is 36″ x 96″ x 24″. The cross bars which hold divider bars are adjustable up and down on 1″ centers; the front to rear divider bars are adjustable across on 2″ centers. Additional bars may be added to the long parts section as the shelves and dividers in the lower part of the unit are also easily adjusted. A bin front is provided for the large open section.



Circle No. 110 on Reader Service Card for more information

Vibrating machines have been announced by the Robins Conveyors Division, Hewitt-Robins Inc. One is a Vibra-Feeder employing mechanical (rather than electro-magnetic)

DOLLIES & TRUCKS



● A general purpose dolly with open frame and flush top. Light and easy to carry yet capable of handling heavy loads. Equipped with four swivel casters having 3″ semi-steel or rubber tired wheels.

★ Ironbound material handling representatives are located in all important cities. These men can help you with all handling problems involving the use of standard Skids, Semi-Live Skids, Floor Trucks, Roll Handling Trucks, Dollies or specially designed adaptations to meet particular requirements.

IRONBOUND

FLO TRUK

● Popular as an all-purpose general merchandise unit. Ruggedly constructed — selected hardwood deck. Equipped with rubber tired or semi-steel wheels.

Ask for Catalog GP-7

Ironbound

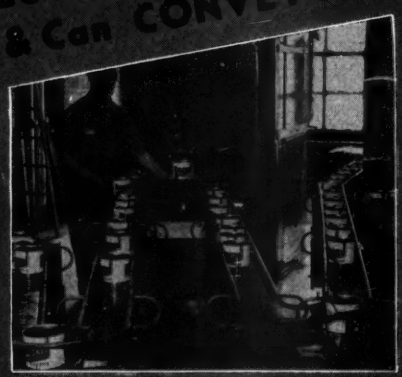
IRONBOUND
BOX & LUMBER COMPANY
Materials Handling Division
30 HOFFMAN PLACE • HILLSIDE, N. J.

SKIDS • SEMI-LIVE SKIDS • DOLLIES • FLOOR TRUCKS

Circle No. 135 on Reader Service Card for more information

Styl-O-Matic® TRADE MARK

The ECONOMICAL Bottle, Jar & Can CONVEYOR

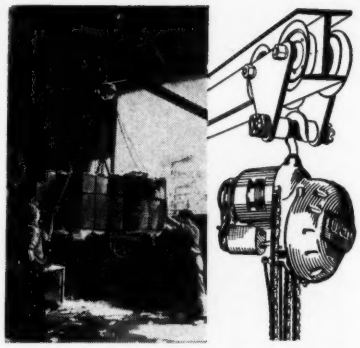


A flexible, smooth operating system for fast, safe, economical conveying. Most users report that it is versatile and the wear and tear on parts is practically nil.

WRITE FOR BULLETIN F26-1A

ISLAND EQUIPMENT CORP.
27-01 Bridge Plaza No. Long Island City 1, N. Y.

Circle No. 136 on Reader Service Card for more information



Draft this hoist!

Greater and greater production is the nation's demand upon industry in these troublesome times. To meet the nation's demand while maintaining the lowest-possible operating costs is industry's chief concern. There a way to do both!

Since load lifting and materials handling is a vital part of production, load-lifting costs must and can be kept to a minimum when a fast, easy-to-operate 'Budgit' Electric Hoist does the lifting on production, assembly, and inspection lines. Here is one reason why management should draft this hoist and do away with the manual lifting of machine, machine parts, tools, and the like. Another is the lower compensation costs when workers no longer suffer sprained backs, torn ligaments and muscles. Another reason is a worker's ability to increase his production for he wastes no valuable time during the day with useless lifting.

'Budgit' Electric Hoists are complete lifting units in themselves—ready for work the moment they're unpacked. No accessories to buy. Just hang up, plug into the nearest electric socket, and use!

Available for all standard electric currents in a wide variety of speeds. Capacities: 250, 500, 1,000, 2,000, and 4,000 lbs. Prices start at $119. Write for Bulletin No. 391.

MAXWELL MANNING MOORE JR. MM&M TRADE MARK

'BUDGIT' *Hoists*

MANNING, MAXWELL & MOORE, INC.
MUSKEGON, MICHIGAN

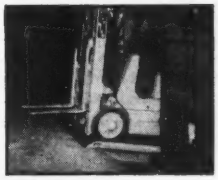
Builders of 'Shaw-Box' Cranes, 'Budgit' and 'Load Lifter' Hoists and other lifting specialties. Makers of 'Ashcroft' Gauges, 'Hancock' Valves, 'Consolidated' Safety and Relief Valves, 'American' Industrial and 'Microsen' Electrical Instruments.

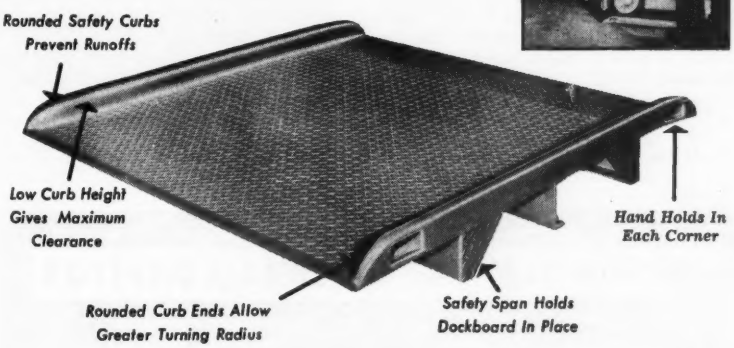
Circle No. 137 on Reader Service Card

Circle No. 138 on Reader Service Card for more information

MAGCOA *Magnesium* DOCKBOARDS

...will solve your carloading problems




Rounded Safety Curbs Prevent Runoffs
Low Curb Height Gives Maximum Clearance
Rounded Curb Ends Allow Greater Turning Radius
Safety Span Holds Dockboard In Place
Hand Holds In Each Corner

- ★ Weigh ¼ as much as steel ramps of equal size and strength
- ★ Bevel edges minimizes jarring of load and equipment
- ★ Bend angle keeps Dockboard flush with floor and dock
- ★ Raised pattern safety tread
- ★ Magnesium is non-sparking for greater safety
- ★ Every Dockboard designed to meet your particular specifications

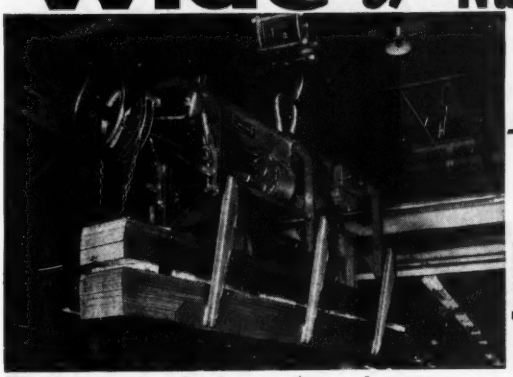
Write us for further information

Magnesium DOCKBOARDS

MAGNESIUM COMPANY OF AMERICA
EAST CHICAGO, INDIANA

30 Rockefeller Plaza, New York 20, N. Y.
1528 Russ Bldg., San Francisco 4, Calif.
7657 Moline St., Houston, Texas
8922 West 25th Street, Los Angeles, Calif.

Wide *or* Narrow...

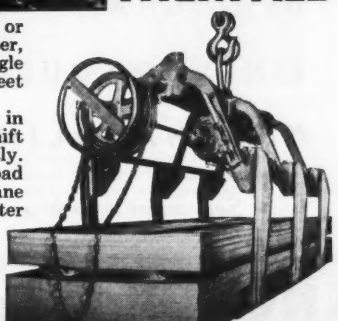


1 C-F LIFTER HANDLES THEM ALL

Whether your production requires a few or many widths of sheet steel, 1 C-F Lifter, with its wide range of jaw and carrying angle adjustments will probably meet all your sheet handling requirements.

Adjustments are made by the operator in a few seconds, permitting the Lifter to shift from wide to narrow sizes almost instantly.

Because it can pick up, carry and unload more loads per hour, using less man and crane time than any other method, a C-F Lifter will soon pay for itself.



Bulletin SL-25 gives you the complete story of C-F Lifter advantages to you. Ask for it today. There's no obligation.

CULLEN-FRIESTEDT CO.

1320 South Kilbourn Avenue • Chicago 23, Illinois

Circle No. 139 on Reader Service Card for more information

means of operation. It is claimed that this method eliminates a great many parts, some of which require costly maintenance. Only two ampere-draw is required from its ½ hp motor. The second is a Vibra-Veyor which produces balanced mechanical operation without counterweights. One feature claimed for this unit is the abiilty to produce from lengths up to 200′ activated by a single vibrator. Simple design is said to greatly reduce maintenance.

Circle No. 111 on Reader Service Card

Flooring material, known as Roc-Wood, is produced by Roc-Wood Floors, Inc. Applied with a trowel, the material is composed of hardwood fibres chemically treated and bonded with plastic binder. According to the release, it hardens by chemical action, and is designed to withstand heavy loads, crushing shocks and continuous vibrations. Resurfaced floors may be used for light traffic within 12 hours and for heavy unrestricted traffic within 24 hours of application. It is further stated that it may be applied as a patching agent within a few minutes.

Circle No. 112 on Reader Service Card

See what's **NEW**
IN CONVEYORS

A new comprehensive Picture and Sectional Drawing Book showing over 50 different types and designs of Anchor Conveyor systems.

FLAT TOP • PALLET • FLOOR
OVERHEAD • AUTOMATIC • BELT
DRAG CHAIN • SLAT • CROSS BAR
SINGLE & DOUBLE STRAND • TANK
CHIP HANDLING • TURNTABLES

See what's new - - Write for your book

ANCHOR STEEL & CONVEYOR CO.
DESIGNERS & MANUFACTURERS
6906 Kingsley Ave., Dearborn, Mich.

ANCHOR CONVEYORS DEARBORN

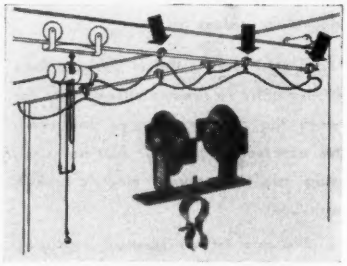
Circle No. 140 on Reader Service Card for more information

Stock picker truck is designed for distributing or filling orders of small parts or stocks of small packaged

goods. It is manufactured by the Rol-Away Truck Co. Made entirely of aluminum alloy, it weighs only 50 lb. A patented step ladder on one end works on a spring principle allowing it to slide down when the operator steps upon it. This makes a sturdy brace when operator climbs to work upper shelves. Easy grip handles also serve as braces against which operator can lean when on ladder. Truck has three shelves and is designed for narrow aisles.

Circle No. 113 on Reader Service Card

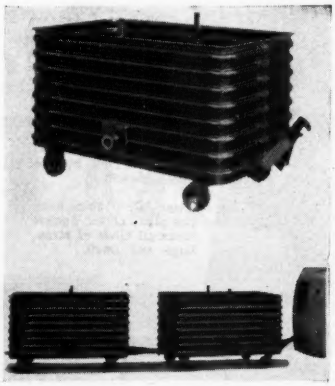
Air hoist hose trolley—A trolley to support the air hose of air hosts installed on an I-beam has been developed



by Keller Tool Co. It is designed to keep the air hose suspended to clear machinery and working areas. The trolley is mounted on the I-beam with the hose supported at five to 10-ft. intervals. When the hoist is moved along the beam, trolleys are pulled along by the hose until extended full length. As the hoist is moved back, trolleys are pushed together, the hose falling in loops between the trolleys.

Circle No. 114 on Reader Service Card

Mobile Corrugated Shop Box Trailer for general shop use has been announced by Palmer-Shile Co. The boxes have trunnions with yoke for quick



and convenient unloading, two stationary wheels and two swivel casters. The trailer hitch permits joining of several boxes in a train, for hauling by a single truck. Units are of all-steel welded construction.

Circle No. 115 on Reader Service Card

Heavy-Duty Sweepers—Wilshire Power Sweeper Co. has announced the addition of a new line of extra heavy duty sweepers designed for use by airports, heavy industrial plants, manufacturing plants and steamship docks. An "Anti-Fatigue" seat which is placed on the front of the sweeper, gives the operator a complete view of the sweeping area. A special dust control unit is designed to eliminate the dust problem

since fine dust is not massaged into ruts and cracks but is sucked up into an easily-emptied hopper. A roller guide permits sweeping right up to machinery, walls or other obstructions without scraping or marring. A "Light-Touch" foot pedal raises the sweeper enabling it to pick up larger objects with ease. Of heavy, one-piece, welded steel plate construction, the model 1000 is powered by an 8 h.p., 4-cycle, air-cooled engine.

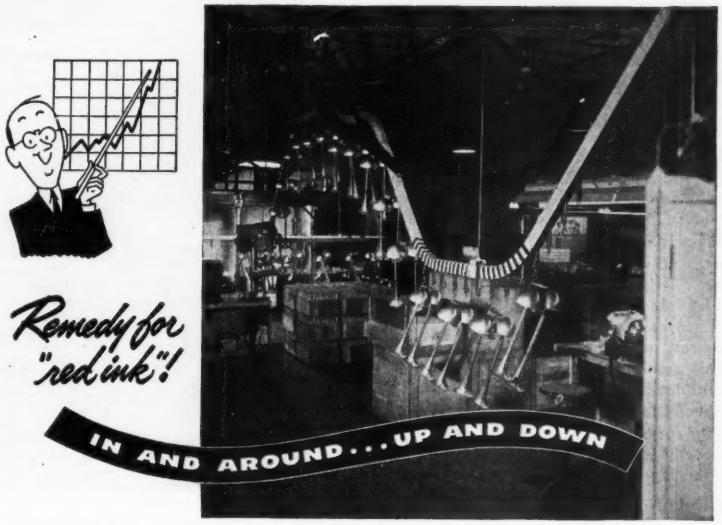
Circle No. 116 on Reader Service Card

This Pallet Roller, manufactured by Frank L. Robinson Co. designed for

the movement of palletized loads from crowded or storage areas to open spaces where they can be picked off by fork trucks or other powered vehicles. It may also be used with limited capacity of floors, elevators, trucks or rail cars. At the end of a production line, pallet loads may be moved out of the way awaiting a fork truck. Three styles are available, including stevedore, full swivel and reefer.

Circle No. 117 on Reader Service Card

Truck Crane—Unit Crane & Shovel Corp. has developed Model 1520T, truck crane. It has a lifting capacity range up to 20 tons, and ¾-yd. in excavator service. It is mounted on a 8-axle, tandem drive crane carrier de-

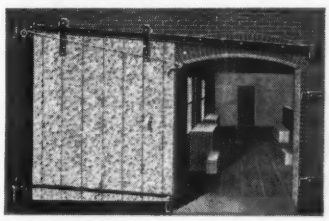


R-W "ZIG-ZAG" continuous power conveyors raise productivity . . . lower costs

In almost every imaginable industry, R-W Zig-Zag Conveyors are serving production and processing lines—increasing efficiency, cutting costs. Specifically designed to carry light loads through confined, crowded areas, Zig-Zag breaks costly "bottle-necks," and helps put production on a more profitable basis.

"ZIG-ZAG" Pays for Itself

Our files are filled with evidence which proves conclusively that the savings effected with R-W Zig-Zag Conveyors are so substantial the equipment quickly pays for itself —in most cases in *less than a year!* So, to put your plant in position for peak profits, convert now to Zig-Zag—the modern method for continuous overhead transportation and processing of materials. For complete details—all the facts about R-W Zig-Zag Conveyors, contact the nearest office of Richards-Wilcox.



R-W No. 2102 Hardware with No. 647 labeled "FyeR-Ward" flat surface steel door.

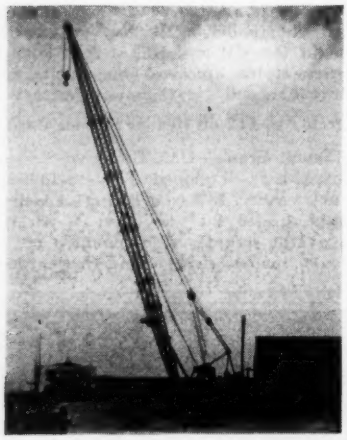
R-W OFFERS COMPLETE LINE OF FIRE DOORS AND AUTOMATIC FIRE DOOR HARDWARE . . . the most comprehensive line of fire door hardware, fire doors and fusible links on the market.

1880 RICHARDS WILCOX R-W AURORA 1950
Reg. U. S. Pat. Off.
OVER 70 YEARS

Richards-Wilcox Mfg. Co.
"A HANGER FOR ANY DOOR THAT SLIDES"
AURORA, ILLINOIS, U.S.A. *Branches in all principal cities*
SLIDING DOOR HANGERS & TRACK • FIRE DOORS & FIXTURES • GARAGE DOORS & EQUIPMENT
INDUSTRIAL CONVEYORS & CRANES • SCHOOL WARDROBES & PARTITIONS
ELEVATOR DOOR OPERATING EQUIPMENT

Circle No. 141 on Reader Service Card for more information

signed for heavy-duty crane operation. A worm type axle unit is mounted in tandem with through drive. Walking



beam supports on the rear axles equalize weight distribution and allow all rear wheels to have constant contact when traveling on uneven terrain. Wheelbase is 184 ins. to center of tandem axles, and the overall width is held to 8 ft. Equipped with 12 ply, 11.00-20 tires—2 in front, 8 in the rear. Parking brake is disc-type, 16 inch diameter, with four shoes. A feature of this machine is the air steering which is standard on all models. It has five speeds forward and one reverse, with a two-speed transfer case offering 10 speeds forward—and two reverse. Road speed is rated at 30 M. P. H.

Circle No. 118 on Reader Service Card

Hydraulic Truck—Cable reels, paper rolls and other materials on spools can be transported and positioned with a

hydraulic truck designed by LYON-Raymond Corp. One model which has been used with small cable reels has a capacity of 300 lbs. The opening between the base forks and elevating forks is 15 ins. and the elevating trucks lower to 14 ins. and elevate to 28 ins. A single-speed hydraulic hand pump and hydraulic cylinder actuate the lifting mechanism. The truck is equipped with two 5" swivel casters and two 5" rigid casters.

Circle No. 119 on Reader Service Card

The BELL Prime Mover

Bulky materials easily transported inside and outside the plant. Dozens of such jobs can be handled by the Prime-Mover.

Prime-Mover helps keep the plant clean. Bucket takes all kinds of scrap, large and small.

GET MORE VALUE FROM YOUR MAN-HOURS

- - you can do it many fold with

THE PRIME-MOVER!

Gear driven—no belts or chains

Engine protected against dirt

Turns in its own length, 63½"; width 31½"

Converts from bucket to platform without tools

Eight hours continuous running on 3 gal. of fuel

Bucket holds 10 cu. ft.

THIS versatile machine is doing a remarkable job in many plants. It can do the same for you. If some particular problem of material handling is bothering you—the Prime-Mover can answer that one and additionally help in a number of other ways, too. This rugged unit works outdoors and indoors to keep things moving. Here is a labor saver that has cut handling costs as much as $36 a day. Send coupon. We'll send you complete information at once.

THE PRIME-MOVER CO.
MUSCATINE, IOWA

ALLIED EQUIPMENT DISTRIBUTORS

THE PRIME MOVER CO., Muscatine, Iowa

Gentlemen: Please send information on Prime Mover for handing .....

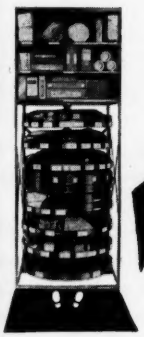
Your Name .....

Company .....

City ..... State F-10

Circle No. 142 on Reader Service Card for more information

SAVE SERVICING TIME



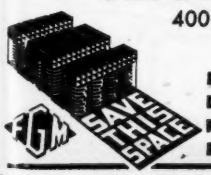
ROTABIN STORAGE METHODS SAVE WALKING TIME AND WAITING TIME...REDUCE SPACE REQUIREMENTS.

Stock clerks handle twice the stock when Rotabins are used. Downtime is reduced because production workers are off the job for shorter periods.

WRITE TODAY FOR FOLDER 220

THE FRICK-GALLAGHER MFG. CO.
WELLSTON, OHIO

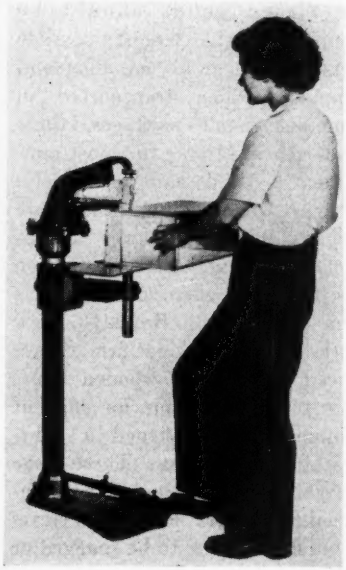
SALES & ENGINEERING
400 Shubert Bldg.,
Phila. 2, Pa.



Pioneers in the Development of Rotating Storage Equipment

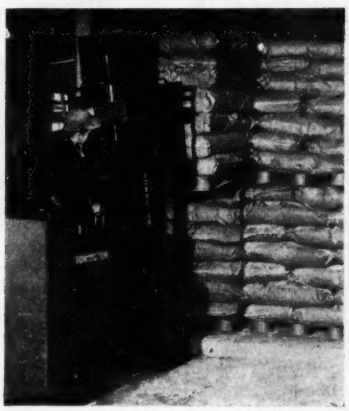
Circle No. 198 on Reader Service Card

Portable Nailer, foot-operated and automatically fed, has been developed by the Heller Co. It is designed to



drive and countersink the company's Lock Nails and has an adjustable table to handle a large variety of work. The feeding chamber holds over 100 nails that come adhered together in one long strip for fast loading. Nails come in sizes ranging from ⅜" to 13/16" long, spear pointed.
Circle No. 120 on Reader Service Card

Glued Loads on Expendable Pallets. —Bagged starch has taken on a new look and grown legs. Stacked in four-ft. cubes, bags are glued together to make a load unit of



2100 lb.; special releasable glue permits bags to be separated later without tearing. The starch bags are also glued on a 12-post expendable fibreboard pallet, 21 bags to the load. The photograph shows loads after a long rail shipment. In 14 carload shipments, only one broken bag was discovered.—Courtesy, Robert Gair Co., Inc.

Machine Feeding 1950 STYLE

■ Alabama Metal Lath Company of Birmingham increases the productivity of men and machines by using six hydraulic LEVELATORS for feeding a battery of stripping, cutting and expanding machines.

Labor costs for machine feeding are reduced because hydraulic power, not men, lifts the stock. Materials are always at the height most convenient for fast, continuous feeding.

Production rates of high-speed machines are maintained at top limits by LEVELATOR feeding. (Whenever heavy materials have to be lifted manually to machine level, continuous-production machinery runs idle . . . labor costs skyrocket.)

Levelators are designed for loads up to 80,000 pounds, travel and speeds as required. When lowered they are level with floor and can be trucked over. Powered by air or hydraulic power unit. Simple, safe, dependable operation proved in hundreds of machine feeding installations throughout the nation.

Write for Catalog

If you are interested in cutting labor costs and increasing production rates, it will pay you to get the facts on Rotary Levelators. Write for Catalog No. RE-202, today. Rotary Lift Co., 1141 Kentucky, Memphis, Tenn.

Rotary
Levelator Lifts

Circle No. 143 on Reader Service Card

Packaging Hints for Far East Shipments

Delivering goods safely and securely from American plants to the Far East has become a problem of added importance. Military specifications must again be met, packing operations streamlined, former domestic shipments strengthened for overseas transit; and all done with an eye to cutting costs.

Firms which have concentrated on domestic distribution will probably face the more difficult adjustment. However, a few tips passed on by export men may be helpful in reducing costs and stepping up efficiency.

1. Soft goods should be prepacked in light weight protective material and compressed into bales by means of steel strapping. This method makes them resilient, minimizing the degree of probable damage and maximizing the savings in gross weight and cubic volume.

2. Cased goods should be grouped in the largest possible units convenient for handling and shipping. When transported in numerous small packages, these goods generally take the most punishment. Load units, securely-strapped to expendable pallets are perhaps the best answer to this knotty problem. Another solution based on the same principle has been offered by a Brooklyn, New York export packing firm. Convinced that pailed wooden boxes were too cumbersome for efficient shipping, they designed a lightweight plywood van. These huge lift vans are constructed with internal framework, leaving no cleats or outside bracing to be snagged or damaged in transit.

3. Many factors enter into military shipments besides size, weight, handling and product value. Vulnerability of the product or packaging to salt-sea air and water or extremes in climate conditions must be offset, also. Waterproofed linings for cartons, absorbent materials within packages, and corrosion resistant strapping should all be considered as means of insuring safe arrival.

4. During World War II, government authorities specified steel strapped packaging for supplies such as food, clothing, arms, vehicles, and other vital material. This precaution prevented loss and damage, at the same time conserving precious storage space and providing faster handling. These five points were used as a guide by shippers:
A. Use strap of correct width and thickness. B. Put all strapping on straight. C. Tighten and seal with suppliers' specified tools. D. Tighten strap . . . until edges are indented. E. Boxes may shrink—strap when ready to ship.—*Courtesy, Acme Steel Co.*

Handle parts and materials faster, *and save space* with Donaldson's versatile TIER TRUCK. REDUCE HANDLING . . . roll parts right next to production machinery or assembly line . . . move them directly from tiered storage to next production operation. Self-aligning baskets . . . stack neatly and quickly to any practical height. Sturdy angle frame. Expanded metal basket permits clear view of contents. Two fixed and one swiveling caster for maneuverability.

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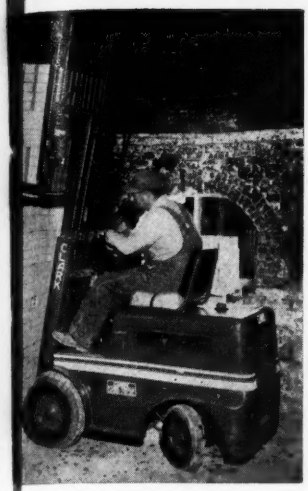

LEFT: Fork truck machine-sets cubes of green brick. No touching of individual bricks. CENTER: Delivery vehicles may be loaded by the cube. Cube handling is the rule in setting, drawing and stocking. RIGHT: Unusual is this load of curved silo tile because they cannot be cross-tied. The load stabilizer binds top of the load, making it possible to handle such 12 x 12 x 3 tile.

Fork Design For Improved Brick Handling

By W. C. FRANCIS
Superintendent
United Brick & Tile Co., Kansas City, Mo.

THE hydraulic brick fork shown here in various operations was developed for handling diversified sizes of bricks and tiles without the necessity for changing any part of the fork. The fork design includes two tines in the center and one on each side. The fork length of 25 inches is the equivalent of the three brick lengths which make up the stringers or "pallet" base. The 400-brick cubes are handled by fork trucks of 2000 lb. capacity.

From the off-bearing belt the green bricks are hacked on the drier car in such a pattern so that they can be handled as a unit through most of the subsequent operations. The pattern for dried brick is shown in one of the photos; the finished brick is set in a more compact pattern. Some variations in handling are necessary because our company operates both beehive and the newer type of tunnel kiln. In the beehive kilns, the cubes are set by machine, three cubes high, and the individual bricks are not touched. However, for the tunnel kiln the bricks are reset on the cars in various cube patterns depending on the treatment to be given for color. In the beehive kiln, the uniform type of bricks are machine-set for economy of space. As an example of this machine production, one operator can set 45,000 bricks in an eight-hour day.

No modification of the fork attachment is necessary when changing from handling of dried or in-process bricks to burned ware. The only difference is a minor one: the machine that sets the cubes in the beehive kilns has a pressure limit valve. The pressure is limited to prevent crushing of the dried brick.

The gripping surfaces of the tines are lined with rubber. The contact surfaces of the stabilizer, fitting over the top of the load, are like-wise rubber-cushioned. This part of the attachment prevents the cube from being disturbed when the truck travels over unpaved areas.

The fork is hydraulically operated from the conventional pump on the lift truck, the valve being tied in on the lines that operate the lifting and the lowering on the mast. When the lift is made, pressure is exerted on the tines, and this pressure is commensurate with that needed to lift the entire weight. The pressure on the load (that is, on the 30 bricks making up the stringers or the pallet) cannot be released while the cube is resting on the forks, a factor that assures safety of operation.

The fork tines on the 2000 lb. capacity fork truck are normally spaced 13" apart (rubber to rubber) and close down to grip at a 10" width.

We feel this fork has amply demonstrated its efficiency in daily plant operations during the past several years.

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International Paper Company

BAGPAK DIVISION

220 East 42nd St., New York 17

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PACKAGING MECHANICS SECTION

A regular monthly section in which are presented solutions to the problems of efficient filling and handling the boxes, cartons, bags, bottles, cases, etc., used in commerce and industry.

CONTENTS

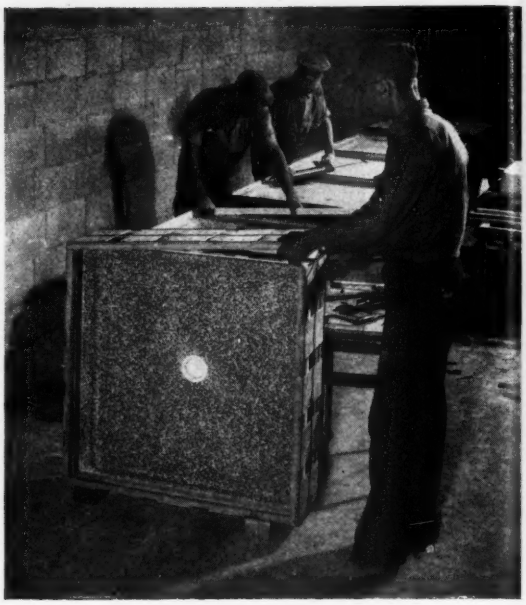
THE PACKAGING SHOW. A brief guide to what you'll see, what you might learn at the Fifth Annual Industrial Packaging & Materials Handling Exposition in Philadelphia, October 10-12 84

SHIPPING HARD-TO-HANDLE BREAKABLES? Then you'll want to read how Fiat Metal Manufacturing Company chopped breakage rates, speeded the packaging and handling of brittle, bulky terrazo shower receptors with the development of a slick new wraparound container 86

This Package ➡

Did 5 Things For Us:

1. **Reduced breakage to one-fourth of one per cent.**
2. **Cut packing time almost 35 per cent.**
3. **Lowered container cost by 10 per cent.**
4. **Gave more storage in less space.**
5. **Reduced package weight in some cases as much as 20 per cent.**



Are You Shipping Hard-To-Handle Breakables?

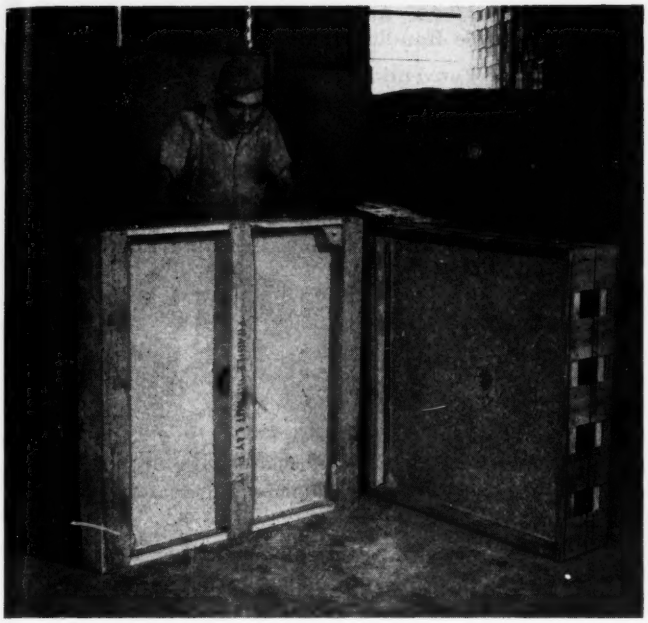
W. W. JOHNSON
Fiat Metal Manufacturing Co.
Franklin Park, Illinios

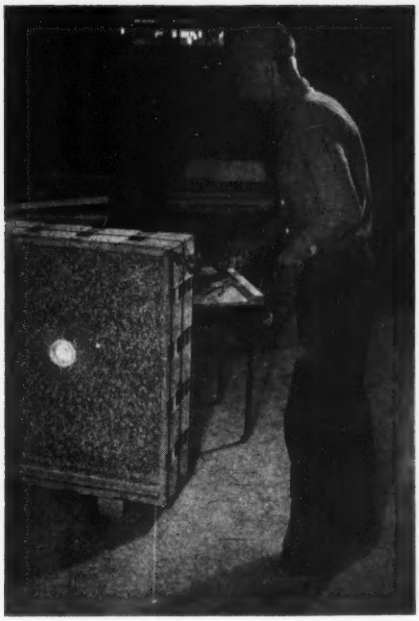
OUR company manufactures toilet partitions and shower cabinets, and this report discusses a packaging problem encountered in connection with the receptor, or shower stall base, which is shipped separately. The receptor is made of terrazzo, a mixture of cement and marble chips, which is polished after hardening. This ceramic product is naturally subject to damage from dropping and other forms of careless handling. The package is all-important, for the reason that it can contribute to breakage or to a profitable operation by preventing breakage.

Short Packing Time

The weight of the individual receptors ranges from 185 lb. to 400 lb. The terrazzo bases arrive in finished condition, and ready for crating, at the end of a 27" wide gravity roller conveyor, which has a counterbalanced fixture at its end point. As the completed receptor rests on the fixture, the mat of the prepared crate is placed around it. The load is then lowered to a standing position, whereupon the crate is closed by twisting the wires. The receptor now stands on two 2 x 4 pieces, which provide the clearance for insertion of a two-wheel hand truck. As the load is removed from the counterbalanced fixture, it returns automatically to the loading position for receiving the next shower stall base.

The storage area adjoins the receptor production room, where the





The Old and The New

Bulky old container the man above leans on took too much time to assemble, didn't give enough protection. Each section had to be positioned around the receptor, then nailed in place by hand.

Twist it and it's tight: that's the happy story of the new wraparound crate at the right. Everything is easy and simple to do.

first layers are stacked by use of two-wheel hand trucks, while an electric portable elevator builds the second and third layers.

Crate Met All Requirements

The adoption of the prepared crate came at the end of a period of trial and error. The packaging problem resulted originally from a nailed solid wooden frame with cover boards.

The receptors range in dimensions from 5 to 8″ wide and 32″x 32″ to 40″ x 40″. Since they are stored on edge the package had a tendency to tip over. This contributed to breakage. While a wider package gave more stability, the larger frame added to the shipping weight, packaging time and the cost. But the highest "cost" factor was the high percentage of damage loss.

Other drawbacks were that the packaged units were awkward to handle, awkward to stack and bulky in storage. An idea of the tremendous space consumption of the old container can be gained from the fact that in space where 100 solid wood crates were stored now 1000 of the prepared crates (collapsed) can be accommodated.

This 10 to one ratio is working to our advantage—it has given us hundreds of extra sq. ft. of needed production space.

Our experiments with an improved crate (of the suspension type) were carried out over a period of months. At one time we put the cover boards inside in an attempt to prevent concentration of strain at a single point, which caused the breakage.

Because there are two major types of receptor design, two wirebound crate designs were ultimately adopted. In both types, however, the purpose is the same: the inner positioning pieces (wooden cleats) hold the receptor in place, give balance to the crate (now 11″ wide) and provide cushioning, or act as shock absorbers.

The engineered package met our main requisites for carrying the receptor without breakage, reducing the container cost, as well as for a businesslike package that would add distinction to the product by giving it some recognition value. While this latter factor frequently is no consideration in industrial packing, it has proved of value to us in connection with our distributors.

Don't Miss It

Event: Fifth Annual Industrial Packaging and Materials Handling Exposition.

Place: Convention Hall, Philadelphia

Date: October 10-12

Features: Equipment Exhibit, Short Course, Military Packaging Review. Something New: Addition of material handling classification as part of annual packaging competition. Sponsor: Industrial Packaging and Materials Handling Engineers.

HERE is a list of the exhibitors that will be at the Fifth Annual Packaging and Materials Handling Exposition. The products of these leading manufacturers will be on display there. Many of them are designed to save you untold number of dollars in better materials handling and packaging methods.

The program committee reports that something new has been added to the events this year. This is the material handling competition which is expected to attract a great array of engineering ingenuity. The three cash prizes will be in the amounts of $100, $50 and $25. The entry requirements have been made as broad as possible to encourage participation. Officials realize that, in this classification, it would be difficult to submit samples, and hence the submission of photographic displays, or models, is encouraged. With patented devices excluded, this classification is open to money-saving developments in material handling as originated by an industry.

As usual, the packaging competition is devoted to effectiveness of shipping container design. The revised classifications in this group include: corrugated or solid fiber boxes; nailed wooden boxes and crates; wirebound boxes and crates; cleated panel boxes; export packages, and a general designation which includes metal containers, fiber drums, wooden barrels, bundles, sacks, bags and bales.

Application forms and copies of rules and regulations are available from the Society of Industrial Packaging and Materials Handling Engineers, Suite 705, 20 West Jackson Boulevard, Chicago 4, Illinois.

They Can All Help You Make "Profits From Problems"

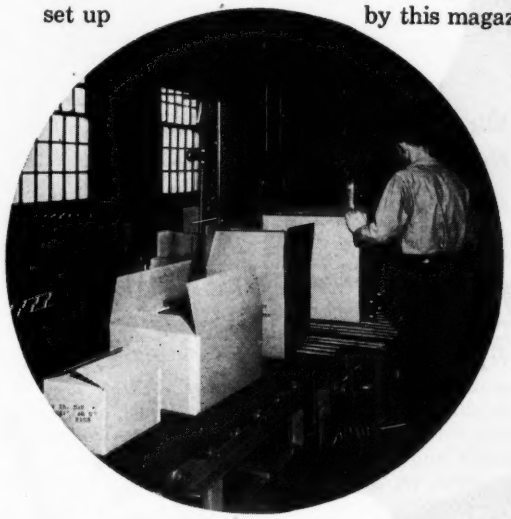
Exhibitor	Booth Number
Acme Steel Co.	237, 238
Algene Marking Equipment, Inc.	412
American Excelsior Corp.	409, 411
Angier Corp.	402, 404, 406
Associated Cooperage Industries of America, Inc.	208
Atlas Plywood Corp.	502, 504
Berlin-Chapman Co.	327, 329
Chippewa Paper Products Co., Inc.	324, 326
Cleveland Impact Recorder	513
Continental Can Co., Inc.	205
D. C. Cooper Co.	439
Dumatic Industries	518
Thos. A. Edison, Inc., Storage Battery Div.	328, 330
Elberta Crate & Box Co.	331
Fibre Drum Mfrs. Assn.	320
FLOW Magazine	206
Fox Paper Co.	310, 312
Freedom-Valvoline Oil Co.	207
Gaylord Container Corp.	302, 304
General Box Co.	309, 311
Gerrard Steel Strapping Co.	202, 204, 301, 303
Gloco Products Co.	337
Gould Storage Battery Co.	434, 436
Heintz Mfg. Co.	306
Hinde & Dauch Paper Co.	314, 316
R. M. Hollingshead Corp.	321
Ideal Stencil Machine Co.	437
Inland Container Corp.	213
International Paper Co., Container Div.	413, 415
International Staple & Machine Co.	501, 503, 505
Jiffy Mfg. Co.	313, 315
Kennedy Car Liner & Bag Co., Inc.	408, 410
Kimberly-Clark Corp.	201, 203
L & H Wood Mfg. Co.	117
Mark'Andy Inc.	507
Markem Machine Co.	210, 212
Marsh Stencil Machine Co.	214
Mid-States Container Corp.	338, 339
National Container Corp.	234, 236
National Metal Edge Box Co.	317, 319
National Wooden Box Assn.	509, 511
Nox-Rust Chemical Corp.	305, 307
Rathborne, Hair & Ridgway Box Co.	414, 416
River Raisin Paper Co.	405, 407
Sherman Paper Products Corp.	333, 335
Shipping Management, Inc.	101
Signode Steel Strapping Co.	209, 211
Stanley Works, The, Steel Strapping Div.	438
TeleFlex Inc.	239
Traffic Service Corp.	401, 403
Vanant Products, Inc.	322
Watkins Container Mfrs. Assn.	222
Whitemarsh Specialties Co.	308
Wirebound Box Mfrs. Assn.	417, 419
Wood Conversion Co.	318
Yale & Towne Mfg. Co.	332, 334, 336, 431, 433, 435

INTERNATIONAL *Retractable Anvil* STAPLE MACHINES SAVE YOU MONEY IN EVERY PHASE OF YOUR SHIPPING OPERATIONS

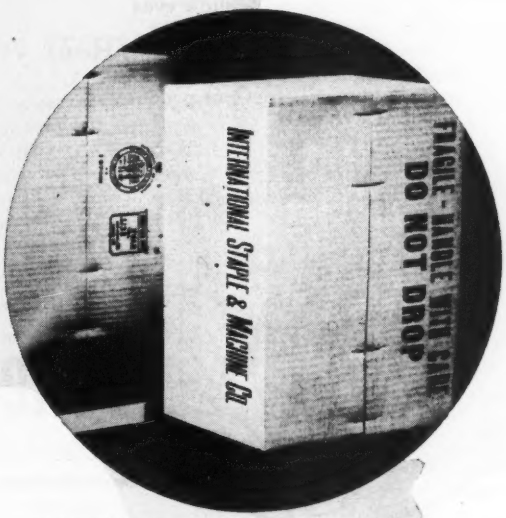
In many cases these savings amount to 50% or more of current shipping expenses. Our machines make such savings possible by securely and neatly closing filled fibre or corrugated cartons from the outside, tops and bottoms simultaneously.

One of our distributors will be happy to show you how an International Staple Machine can profitably fit into your shipping room operations. Write us direct or use the inquiry system set up by this magazine.

PACKING—Save space! Cartons remain flat until ready for use. No bottom sealing necessary.



CARTON CLOSING—Save time! One operator closes 400 cartons per hour. Machine automatically adjusts for variable carton sizes.



SHIPPING—Save prestige—eliminate pilferage—reduce damage claims. Closure meets Consolidated Freight and Postal regulations. Cartons can be re-used by dealers, customers, etc.

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HAVERTOWN 18, PA.

Distributors in Principal Cities

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for PROOF that General Boxes CUT COSTS . . . let's

CHECK THE RECORD

No. 7105

Gross Shipping Weight	
Old Package	410 lbs.
* New Package	364 lbs.
Weight Saving	46 lbs.

No. 7038

Gross Shipping Weight	
Old Package	120 lbs.
* New Package	104 lbs.
Weight Saving	16 lbs.

No. 7023

Gross Shipping Weight	
Old Package	39 lbs.
* New Package	34 lbs.
Weight Saving	5 lbs.

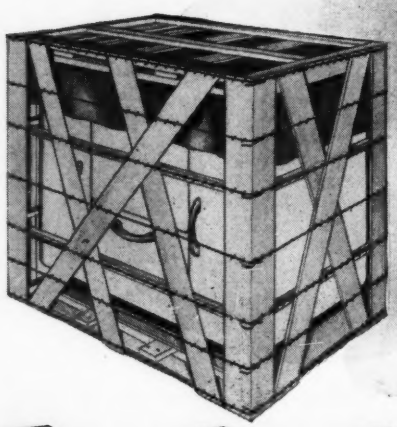
No. 7147

Gross Shipping Weight	
Old Package	95 lbs.
* New Package	83 lbs.
Weight Saving	12 lbs.

General Engineered
CONTAINERS PROVIDE AVERAGE SAVING OF 19.75 LBS.

Here's *concrete evidence* of savings! 4 widely diversified products from the case history files of our Designing and Testing Laboratories show an average weight saving of 19.75 lbs. Many of the hundreds of case histories on file show even greater weight savings!

Better check today on this vital subject. We'll be glad to help design a more efficient container for your product.



* "New Packages" were designed in our DESIGNING and TESTING LABORATORIES

General ★★★★★ BOX COMPANY

engineered shipping containers

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60 W. Illinois Street, Chicago 10, Ill.

DISTRICT OFFICES AND PLANTS: Cincinnati, Denville, N. J., Detroit, East St. Louis, Kansas City, Louisville, Meridian, Miss., Milwaukee, Sheboygan, Winchenden. Continental Box Company, Inc.: Houston, Dallas.

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Kimpak* Float Packaging

VANITY
Surface Protection

Cuts shipping costs — reduces damage in transit!

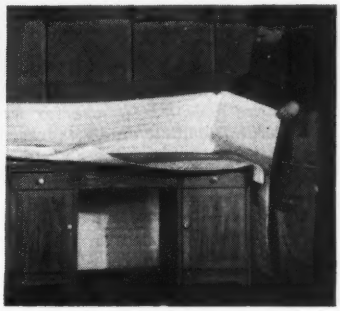
Does your product need super special protection in shipment against shock and vibration — a smooth, soft covering for finely finished surfaces — or simply a material to fill in the voids of an irregular shape?

Whatever your packaging problem, the answer very likely is KIMPAK* Float Packaging. It's the safe, economical, *modern* way to protect every kind of product, from tiny vials of liquid gold to the gleaming finish of a mighty diesel locomotive.

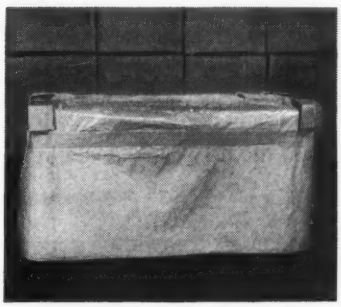
KIMPAK creped wadding comes in a wide variety of specifications that cover all Four Basic Methods of Interior Packaging. It's so light, so easy and pleasant to handle, your labor and shipping costs can be measurably reduced. It's clean, white, soft and completely free of abrasive particles. Yet tough, resilient KIMPAK provides superior protection against the hazards incurred in shipping and storage.

Why not discover today how smart-looking KIMPAK gives your product sparkling new sales appeal as well as incomparably safe, sure protection. For further information, look in your classified telephone directory under "Packing Materials" or "Packing Materials - Shipping" or write directly to Kimberly-Clark Corporation, Neenah, Wisconsin.

1. Every exposed surface of this finely finished vanity, especially the highly polished top, must be protected against scratching, rubbing, press marking.



2. Sheet of KIMPAK is applied to all finished surfaces. Sheets in correct size or cut from rolls of specified width, minimize inventory requirements.



3. Now completely wrapped in KIMPAK, fastened with adhesive tape, the vanity is ready to insert in its corrugate shipping container.

All photographs courtesy of Henredon-Heritage Co., Morganton, N. Carolina.

FREE BOOKLET!

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Please send me free, the illustrated KIMPAK booklet, "Float Packaging."

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CREPED WADDING

Circle No. 149 on Reader Service Card for more information

USEFUL BULLETINS • BOOKLETS • CATALOGS

The publications featured on these pages were written by experts. They are FREE publications. To obtain them use the postcard bound into this issue.

Trucks, Truck Accessories

High Lift Truck . . . A bulletin offered by the LYON-Raymond Corp. describes the company's 1000-lb. capacity hydraulic high lift truck. Specifications and construction details are illustrated by line drawings which show dimensional data. Several suggested applications are sketched. The trucks are designed for use for work positioning, stacking and tiering, loading motor trucks, transporting skids, handling dies, etc. Standard elevated heights of 48″ and 60″ are offered. A telescopic frame, available as an extra accessory increases the elevated height to 108″. A hydraulic hand pump is standard equipment, however, an electric powered pump can be furnished for the lifting operation.

Circle No. 150 on Reader Service Card for more information

Walkie Truck . . . A six-page descriptive folder on the Transporter '101', walkie-type vehicle, is available from the Automatic Transportation Co. The three-color booklet contains complete specifications on the '101', which was introduced only recently. In additions to photographs and illustrations of the features, the literature includes dimension drawings. Both pallet and platform models are illustrated and described.

Circle No. 151 on Reader Service Card for more information

Hand Truck . . . A two-color folder, offered by Marvel Industries, Inc., gives full operating and construction details on its Lift-O-Matic specialized hand truck. The unit is designed with jaws on its vertical post, which engage various types of drums, barrels, cans, etc. Additional attachments can adapt the vehicle to handle carboys, cartons and tote boxes. The truck's over-all length is 5′, width, 23″. Its capacity is 1000 lb.

Circle No. 152 on Reader Service Card for more information

Truck Loading Equipment . . . The Eimco Corp. has published a four-color leaflet on its RockerShovel which is designed for handling rock, sand and gravel into trucks and other carriers. It discharges from a moving bucket which moves from the front of the vehicle over the cab and above the carrier. The bucket can be controlled for dribble load into small receptacles or can bring the load up rapidly to throw into long, large trucks. Bucket capacity is from 1¾ to 2 yds.; loading capacity is six to eight yds. per minute.

Circle No. 153 on Reader Service Card for more information

Fork Truck Case Study . . . Freight and cargo carriers may be interested in a Certified Job Study by Towmotor Corp. showing how Victor Lynn Lines reduces terminal storage and saves time in loading and unloading materials shipped by truck and diesel-type freighters. The job of loading a freighter was cut from 72 to 12 manhours, eliminating congestion of docks and costly tie-up of facilities. The unloading of a truck, which formerly required 8 manhours, is now accomplished in 20 minutes.

Circle No. 154 on Reader Service Card for more information

Conveyors and Cranes

Cleated Belt Conveyor . . . Operating at inclines to 45 degrees is a cleated belt conveyor, manufactured by The Rapids-Standard Co., which is covered in a pamphlet offered by the company. It is designed to handle cartons, crates or bags and either rough or smooth-surfaced materials. It can be installed along a wall, inside or outside of a building, or through special openings in the ceiling. Often it can be mounted in a stairway without eliminating traffic. Engineering drawings, charts and graphs, also detailed specifications and other construction data.

Circle No. 155 on Reader Service Card for more information

Bridge Cranes . . . Northern Engineering Works is offering an eight-page illustrated Booklet G-700 which shows a wide range of installations of its traveling cranes in steel mills, power plants. Other operations depicted are in metal fabricating plants, paper mills, machine tool plants, tool and die shops, foundries, scrap yards, railroad yards, electrical shops, etc. Profusely illustrated with easy-to-understand text.

Circle No. 156 on Reader Service Card for more information

Mobile Cranes . . . The Lorain 50- Series of power shovels and cranes is presented in a catalog available from the Thew Shovel Co. This machine in the one-yd. class is equipped with a hydraulic coupling as standard equipment. This is

said to increase output by improving the "hanging-on" qualities of the engine, prevents stalling of engine due to any digging conditions, and reduces maintenance by acting as a "shock-absorber" to keep impact shocks and digging stresses and strains from being transferred to the mechanism or cables. This also reduces vibration. Swing clutches, one-piece cast steel turntable bed, air controls for steering and tread lock are illustrated and described. Four different size crawlers are available in this series as shovel, dragline, clamshell, crane and hoe.

Circle No. 157 on Reader Service Card for more information

Overload Warning Device . . . W. C. Dillon & Co. has released a catalog page on its Dyna-Switch which automatically warns when a hoist or crane is being overloaded. In operation, it is placed on a hoist or crane hook with loads suspended directly beneath. If the load limit is exceeded, the bar trips a sensitive micro-switch which may be connected to a warning light or bell. Direct connection into the motor may be made if cutout is desired. It operates at any point between 500 and 10,000 lb.

Circle No. 158 on Reader Service Card for more information

Accessories, Supplies, Specialized Equipment

Locomotives . . . A 44-page catalog describing a complete line of gasoline, diesel, and diesel-electric locomotives is offered by the Plymouth Locomotive Works, division of The Fate-Root-Heath Co. These locomotives range from 2½ to 75 tons and are made in both standard and narrow gage. The catalog presents the complete line, listing sizes and types available and indicating specifications and capacities.

Circle No. 159 on Reader Service Card for more information

Steel Strapping . . . Case histories of packaging and shipping short-cuts are contained in the current issue of Process News, published by Acme Steel Co. Among the features is the story of a West Coast food processor who stitches 2000 air-tight containers an hour on a single machine. A logger tells how he conquered choppy seas by bundling timber into rafts. The packaging of live chicks for safe shipment around the world is also explained. Eleven of these capsule stories are told in a well-illustrated and informative style.

Circle No. 160 on Reader Service Card for more information

Filing Systems . . . "How To Simplify Your Files and Filing Systems" is the subject of a 40-page booklet released by Remington Rand Inc. It is based on the premise that many time saving, work saving filing techniques are often unknown to the average file clerk. The life cycle of a file is charted beginning with the origin of a record, whether internal or external, then progressing through indexing, the file housing and protection, and charge-out, to the retention or transfer of the record, including the use of modern microfilming equipment. The publication outlines the essence of scientific filing detailing the various indexing features of a good filing system. It also brings out the various ways and means of finding filed material and even devotes a full page to the problem of the proper spelling of names.

Circle No. 161 on Reader Service Card for more information

ADJUST-A-DOCKS
MEET TRUCKS ON THE LEVEL

TRIPLE DOCK CAPACITIES with LESS LABOR!

RUGGED HYDRAULIC SYSTEM. Push button control of the motor-operated hydraulic system quickly brings the floating dock to truck bed level where rounded steel arms float the dock at truck level.

AUTOMATICALLY SAFE. Limit switch automatic control prevents even a loaded Adjust-A-Dock from dropping if truck should move away. When not in use, Adjust-A-Docks are leveled with dock floor and sustain loads up to 400 pounds per square foot.

EASILY INSTALLED. Adjust-A-Dock installations, designed to withstand weather, are made completely above ground and have a 100% salvage value in event they are moved.

ADJUST-A-DOCK users have reported important savings in dock space, loading time, labor, handling time and damage. These savings, in many cases, paid for their entire Adjust-A-Dock installations in less than 30 days.

ROWE METHODS, INC. 1741 EAST 25th STREET CLEVELAND 14, OHIO

WRITE FOR COMPLETE INFORMATION ON ALL MODELS NO OBLIGATION, OF COURSE.

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Circle No. 166 on Reader Service Card for more information

Cartons or Coils

OUNCES OR TONS

handling it is a MATHEWS job

With sound engineering practices and quality materials, Mathews builds fine, versatile material handling equipment . . . systems capable of meeting any conveying requirement for handling any package . . from a twenty-five ton coil to a one pound carton.

When you install a Mathews Conveyer system in your plant, you get technical experience in a product built to withstand years of rugged punishment, PLUS a seasoned engineering staff, willing and able to assist you in the solution of your conveying problems.

Engineering offices located in principle American and Canadian cities.

MATHEWS CONVEYERS

GENERAL OFFICES

Mathews Conveyer Company . . Ellwood City, Pennsylvania

PACIFIC COAST DIVISION

Mathews Conveyer Company West Coast . San Carlos, California

CANADIAN DIVISION

Mathews Conveyer Company, Ltd. . . Port Hope, Ontario

Pneumatic Tube Systems . . . The Standard Conveyor Co. offering an illustrated bulletin describing four pneumatic tube installations in wholesale houses, libraries and manufacturing plants. It tells how these systems are saving several thousand dollars in one year over original cost of the system. Progressive photo reports depict the many stations along the system, plus construction and operating features.

Circle No. 162 on Reader Service Card for more information

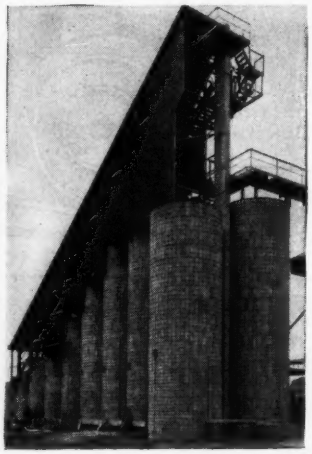
Stitchers, Staplers . . . A catalogue folder, designed for those who ship with corrugated cartons, is now being offered by Bostitch. It describes and illustrates wire stitching and stapling machines now available for all types and sizes of containers.

Circle No. 163 on Reader Service Card for more information

Battery Specification Sheets . . . The Gould Storage Battery Corp. has released six data sheets designed to help specification engineers and purchasing agents select the correct motive power batteries for industrial trucks and for mine locomotives and shuttle cars. Each sheet includes a cut-away illustration showing battery components and a series of capacity curves from which a battery may be selected according to the power it must deliver and the length of time it must supply this power. Specification data includes information on plates, separators, retainers, jar, cell cover, and televel vent plugs. Each sheet concludes with a table listing the battery sizes for the particular battery model to which the sheet pertains.

Circle No. 164 on Reader Service Card for more information

N & F SILOS Carry Heavy Superstructure



Without extra supports, the Neff & Fry silos shown in the photograph carry the heavy machinery for screening and grading silica sand. This emphasizes the stamina of N & F Super-Concrete Stave construction.

N & F staves are formed under tremendous hydraulic pressure, then watered and cured. This results in a composition of extreme density and high compressive strength.

Thousands of N & F Silos are being used for storing many kinds of flowable bulk materials—grain, sand, coal, clay, ore, chemicals, wood chips, seeds, peanuts, etc. We can cite numerous examples pertinent to your own storage and handling problems.

Before you decide upon storage bins, ask for complete information about N & F Super-Concrete Stave Silos. A copy of our interesting catalog will be gladly sent upon request.

THE NEFF & FRY COMPANY

151 EAST CENTRAL AVE., CAMDEN, OHIO

NEFF & FRY STORAGE BINS

Circle No. 167 on Reader Service Card for more information

ELECTRIC WHEELS Modernize Trucks and Trailers

A full line of wheels for baggage trucks, industrial trailers, floor trucks, mail carts and other portable equipment.

ELECTRIC wheels are furnished with or without roller bearings to fit your own axles or complete with axles. Steel tires, molded-on-tires, or pneumatic tires.

There is a full range of sizes and our experienced engineers are at your service.

Write us for full information.

ELECTRIC WHEEL CO., 2931 Spruce, Quincy, Ill.

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Circle No. 169 on Reader Service Card for more information

ask Nutting ENGINEERS
FOR ADVICE ON
MATERIALS HANDLING

Fig. 16-24 Two-wheel trucks for every use

Fig. 419-421 Jack and Live Skid

Casters, all types, light, medium, heavy duty

Wheels with demountable rubber tires

Fig. 1136 One of many sizes and styles of bar handle platform trucks

NOW IS THE TIME TO ENGINEER YOUR MATERIALS HANDLING

A planned materials handling layout may well be the difference between profit and loss, between smooth-flowing operation and a time-wasting series of bottenecks. Take advantage of the seasoned experience and valuable advice of a Nutting Engineer. He can advise you on the proper use of trucks with overhead or floor conveyors . . . assembly or production line use . . . inter-departmental use . . . warehouse or shipping room use . . . as well as applications where only trucks should be used.

Over 1000 Nutting Designs

We supply every need in floor trucks, casters, wheels—including specially designed trucks for specific needs. Look in Your Classified Telephone Directory to contact your nearest Nutting Sales Engineer, or write to us direct. Ask for Bulletin 49-G.

our 59th Year NUTTING TRUCK and CASTER COMPANY

1604 DIVISION ST., FARIBAULT, MINN.

forever KW

Forever is a long time—but that's KW's way of saying Battery Reliability . . . and that's exactly how long KW Battery service lasts on the KW Perpetual Power Plan!

Ask about our cost-guaranteed-in-advance plan! It's the maintenance man's answer to *continuous* top battery performance! Rugged, heavy-duty KW Batteries withstand constant *severe* railroad use—*that's why we can afford to guarantee service in ANY field!* There's no "price" battery in the KW line because KW sells power, *forever!*

K. W. BATTERY COMPANY, INC.

3705 N. LINCOLN AVE CHICAGO 13 · Foot of MONTAGUE ST. BROOKLYN 2

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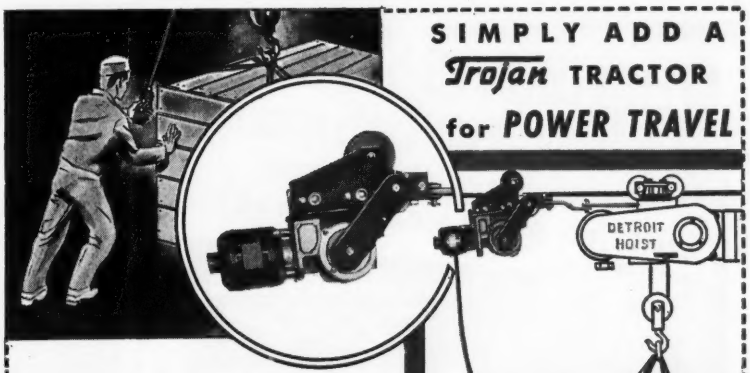

SIMPLY ADD A Trojan TRACTOR for POWER TRAVEL

Most every plant has some slow, hand traveled hoists, cranes, conveyors and other units that would do more work faster if they were power traveled.

The Trojan Tractor is a complete, compact, low cost, power driven unit designed and built to push and pull existing hand traveled material handling equipment. It is quickly attached through a draw-bar.

The Trojan Tractor is priced from $360.00 up.

Bulletin 810 will give you further information.

Fill in your company name, address, and send us this advertisement for a copy.

DETROIT HOIST & MACHINE COMPANY
8226 MORROW ST. • DETROIT 11, MICH.
Company_____
Address_____

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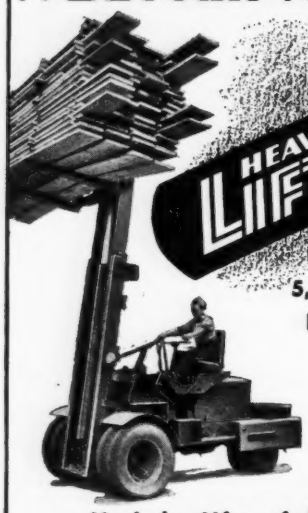
Circle No. 172 on Reader Service Card for more information

A BETTER FORK TRUCK



5, 7½, 10 Ton Cap.
Bulletin No. 76

Agents in Principal Cities

Responsible Distributors Invited to Inquire

Made by Mfrs. of KRANE KAR

The Pioneer Manufacturers of HEAVY DUTY Industrial Materials Handling Equipment

SILENT HOIST & CRANE CO.

888 63rd STREET, BROOKLYN 20, N. Y.

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ARE YOU TROUBLED BY

HIGH PALLET MORTALITY?

THERE'S EXTRA LIFE BUILT INTO ALL

WILCO PALLETS

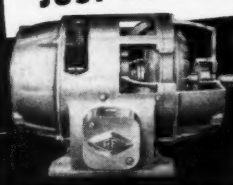
WILCO PALLETS outlast them all.

WILLIFORD MFG. CO.

Box 6095-F, Buntyn Station
MEMPHIS 11, TENNESSEE

FLUID DRIVES cut motor h.p. requirements from ⅓ to ½ of normal

NO NEED TO OVERMOTOR JUST TO START HEAVY LOADS!



USE LOW COST **REULAND** *Fluid-Shaft* MOTORS WITH ECONOMICAL *Integral Fluid Drive*

Reuland Fluid Shaft motors are the very latest in crane, hoist and conveyor power. Exclusive INTEGRAL FLUID DRIVE permits low original cost—smooth operation assures lowest maintenance costs. Already proved on over 500 jobs!

- **Smooth starts:** Motor attains full speed while fluid coupling engages load gradually. No jerking. No swinging of suspended loads.
- **No need to overmotor:** Permits use of correct operating h.p. Saves cost of larger motors. Eliminates overloads. Saves power.
- **Motoreducers:** Single and double reduction motoreducers with Fluid Shaft provide motor, gears and fluid drive in one basic unit.
- **Shock absorption:** Cushion of oil protects against shocks and jamming.

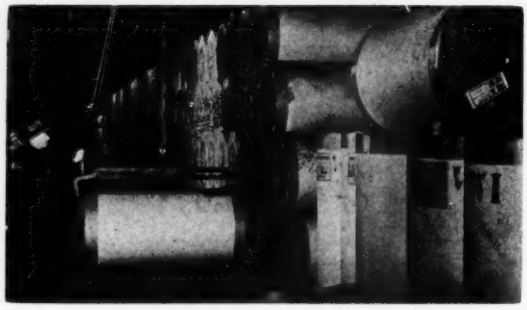
There is only one motor with INTEGRAL FLUID DRIVE and that is the Reuland Fluid Shaft. Specified by manufacturers and users wherever loads are difficult to start or require smooth acceleration!

Write for **FREE** engineering folder No. 1000 and case history file today!

Distributor and Dealer inquiries invited

REULAND Electric Company
ALHAMBRA • CALIFORNIA

STORAGE INCREASED 60% IN LIMITED SPACE AT LARGE DAILY NEWSPAPER



Maximum storage obtained by installation of underrunning low-head room IMCO Crane in paper roll storage area of city newspaper.

Twin bridge balanced construction permits high stacking and full utilization of storage cube.

Full line of Cranes and Monorail available.

Write for Complete Information and Nearest Agent.

INDUSTRIAL MONORAIL & CONVEYOR COMPANY
1819 HARLAN STREET PHILADELPHIA 21, PA.

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Circle No. 175 on Reader Service Card for more information

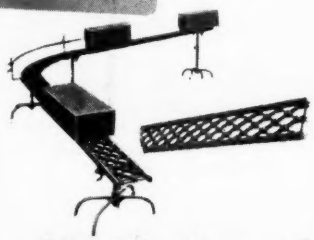
STANDARDIZE on

marforge

the RIGHT type of equipment for EVERY TYPE of job

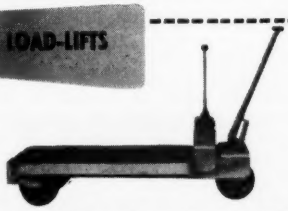
Pioneers in standardization and completeness of lines, the Market Forge Company is prepared to help you solve any materials handling problem.

LOAD-VEYORS



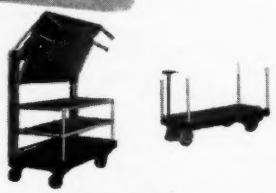
Lightest weight steel conveyors. Exclusive rail arrangement prevents small packages from falling off. Strong, grid construction supporting ball bearing rollers on both sides.

LOAD-LIFTS



Hand lift truck provides easy, efficient operation at low maintenance costs. Pulls easily — steers effortlessly. 100% safe — non-flying handle. Proved to be outstandingly successful.

LOAD-CARRIERS



Standardized trucks readily converted to meet every materials handling requirement. Remove or add accessories according to changing needs. Fast . . . Simple . . . Economical.

Send for the complete illustrated catalog. We will be glad to furnish information on special requirements. Dept. MH, 25 Garvey St.

Market Forge Company

EVERETT 49, MASSACHUSETTS

52 YEARS IN THE MATERIALS HANDLING INDUSTRY

Circle No. 176 on Reader Service Card

OPPORTUNITIES

Men wanted-Jobs wanted-Lines available

EQUIPMENT WANTED

DOLLARS FOR INFORMATION

We will pay 5% commission on all leads furnished to us, which result in our purchase of used handling equipment, such as fork trucks, pallet trucks, cranes, etc. Inform us of such equipment for sale and we will pay you commissions equal to 5% of purchase price if equipment is purchased.

A. & A. MACHINERY CORP.
1267 Flushing Ave. Brooklyn, N. Y.

POSITION WANTED

MATERIALS HANDLING EXPORT SALES ENGINEER AVAILABLE TO HANDLE FOREIGN ACTIVITIES, SURVEYS, SALES, EXPORT MANAGEMENT. EXPERIENCED SALESMAN, LANGUAGES, WIDE INDUSTRIAL FOLLOWING. WILL TRAVEL, RESIDE ABROAD. BOX 10350, FLOW MAGAZINE.

CONSULTING SERVICE

Part-time engineering-materials handling, plant layout, fire, safety, packing. Mature, experienced service. Radius 100 miles New York City. P. O. Box 71, South Orange, New Jersey.

PERSONNEL WANTED

Designer—Design Engineer. Experienced in construction and material handling equipment. Wanted by progressive manufacturer located in midwest section. Excellent opportunity for right man. Give experience, educational background, salary expected, availability, etc. Reply Box 10501, Flow.

LINES WANTED

Sales agent, Material handling equipment desires to add one or two kindred lines. Covering Wisconsin industrial plants, foundries, paper mills & etc. Address Box 10502, FLOW Magazine.

Handle Your Materials with load-floating cost-cutting Colson Trucks

More stuff handled with less effort and cost when your plant is equipped with Colson trucks. Hand trucks, barrel and drum trucks, platform trucks, dish trucks, Lift-Jack Systems, dollies, wheels and casters —all designed for ease of movement, floor saving, extra durability. Less "push" means popularity with workers, profits for you. Write us or consult your phone book for the local Colson office.

WRITE TODAY FOR FREE 56 PAGE CATALOG

Colson Drum Truck model #6055-65, has ballbearing 10" double steel disc type wheels, demountable cushion rubber tires, rugged lightweight tubular steel frame. Chimb hook locks semi-automatically.

THE COLSON CORPORATION

ELYRIA, OHIO

CASTERS • • LIFT JACK SYSTEMS • • INDUSTRIAL TRUCKS

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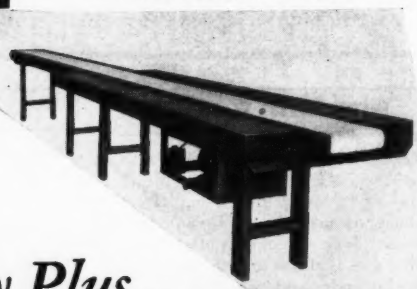
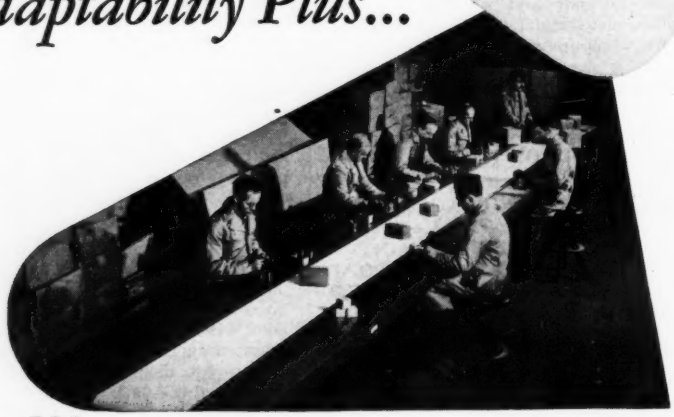
the **UNITABLE**
BELT CONVEYOR



Adaptability Plus...



Where assembly, inspection, or packaging are concerned, the UNITABLE portable belt conveyor fits into more situations than any other piece of equipment you can buy. In addition, its portability, light weight, and easy maintenance assure low-cost operation previously impossible in belt conveyors. The all-around adaptability of the UNITABLE is the result of extremely flexible unitized design. Briefly summarized, this means a range of variation including:

Lengths - 10 to 80 feet
Belt Widths - 6 to 24 inches
Speeds - 3 to 80 feet per minute
Height - 31 to 37 inches
Side Leaves - additional working space of 12 or 18 inches, on one or both sides, if desired

For further details write for the **UNITABLE** *bulletin*

CONVEYOR SPECIALTY COMPANY, INC.
36 Newport Ave. North Quincy 71, Massachusetts

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NEWS FROM THE SALES FIELD

HERMAN H. HOBELMANN, 744 Harrison St., San Francisco: he has been appointed representative for The Harrington Co., 17th and Callowhill Streets, Philadelphia, manufacturers of hoist products. The territory to be covered includes California, Washington and Oregon.

MOBILE Industrial Equipment Corp. has opened a new office and showroom at 9th and Tioga Streets, Philadelphia. It will distribute Mobilift trucks, Lyons conveyors, Yale and Towne pallet and skid trucks and Ruger cranes. The firm will handle sales, service and rentals.

K. J. KISTLER has established a retail outlet and jobbing house at 529 S. Central Ave., Phoenix, Arizona. He will handle all types of supplies for warehouses and shipping rooms and will specialize in stapling machines and steel strapping.

ARTHUR W. LEET, president of A. W. Leet & Associates, Inc., Birmingham, Michigan, has announced the association of Roger N. Burgess with his organization. For over 30 years Leet's company has been selling material handling equipment in eastern Michigan and Toledo, Ohio, representing the Mercury Manufacturing Co. of Chicago. Recently the company added the account of Lift Trucks, Inc. of Cincinnati. Burgess has spent the past 11½ years in the Apparatus Department of the General Electric Co.

APPOINTMENT of Edward W. Addis to its sales staff has been announced by Gordon & Kinney, Inc., Detroit, representative for Automatic Transportation Co., Chicago. Addis comes to the firm from Rowe Methods, Inc., Cleveland, where he was sales manager.

ACQUISITION of new, larger quarters has been announced by the Jim McCabe Co., New Orleans representative for the Automatic Transportation Co., Chicago manufacturer of Automatic Skylift and Transporter electric industrial trucks. McCabe's new quarters are at 301 Industries building, New Orleans. Formerly he was located at 314 St. Charles avenue, New Orleans. His territory includes the entire state of Louisiana.

LITERATURE
featured in ads

Continued from page 19

Load King is a hand hoist made of aluminum alloy castings: the ½-ton job weighs just 37 lbs. Their new bulletin tells about it.
Circle No. 56 on Reader Service Card

The Rapids-Standard Co., Inc. "Rapistan Material Flow at Work" is the name of an interesting booklet this manufacturer has published to show you how his conveyors, trucks and casters can speed handling in your operation.
Circle No. 57 on Reader Service Card

Steel Parts Mfg. Co. Roller and steel belt conveyors are discussed in this advertiser's newest catalogs. Complete engineering data and specs on both.
Circle No. 58 on Reader Service Card

Manning, Maxwell & Moore, Inc. The Budgit hoists these people have developed make handling an "easy-does-it" operation, according to them. They'll tell you more in latest bulletin 391.
Circle No. 59 on Reader Service Card

Mobilift Corp. Mobilift wants you to write today for the specs on their new E series Lev-R-Matic Drive fork lift trucks.
Circle No. 60 on Reader Service Card

American Chain & Cable Co. Dualoc Boom Cable assemblies are described in detail in AC & C's new folder that tells how you can prevent accident headaches by using them.
Circle No. 61 on Reader Service Card

Automatic Transportation Co. A material handling check chart of 8 important handling questions and a booklet-catalog of Automatic equipment is offered by this advertiser.
Circle No. 190 on Reader Service Card

George Haiss Mfg. Co., Inc. Bulletin H-175 shows you the complete Haiss line of conveyors, car unloaders and other Haiss-made handling equipment.
Circle No. 191 on Reader Service Card

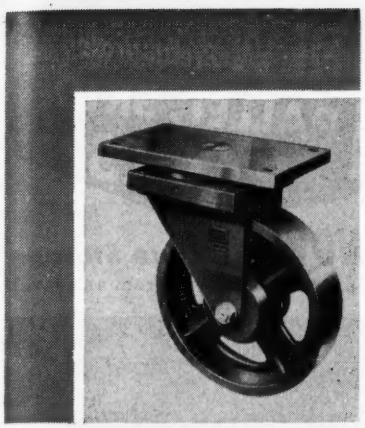
Cullen-Friestedt Co. The story of C-F Lifters is told with illustrations in Bulletin SL-25.
Circle No. 192 on Reader Service Card

Calabar Corp. Smooth-starting tractor power for hoists and monorails is what Calabar wants to tell you about in its latest illustrated catalog.
Circle No. 193 on Reader Service Card

Darnell Corp., Ltd. Darnell's free manual shows you how to get the most protection for your floors, top efficiency in your handling by using the right caster for the job.
Circle No. 194 on Reader Service Card

Industrial Marking Equipment Co. If hand stenciling is taking too much time in your labeling operations, better look into the Auto Printer this advertiser tells about in his new catalog.
Circle No. 195 on Reader Service Card

Ironbound Box & Lumber Co. Dollies and trucks by Ironbound are catalogued in easy-to-find form in a just-published booklet Ironbound has available for you.
Circle No. 196 on Reader Service Card

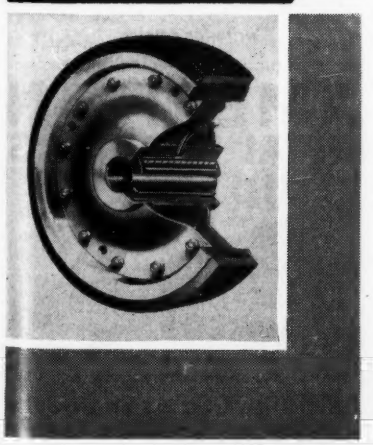


FREE Manual

DARNELL
Casters & Wheels

If you want maximum floor protection, economy and efficiency Demand Darnell Dependability...Made to give an extra long life of satisfactory service . . . . .

DARNELL CORP LTD
LONG BEACH 4 CALIFORNIA
60 WALKER ST NEW YORK 13 N Y
36 N CLINTON CHICAGO 6 ILL



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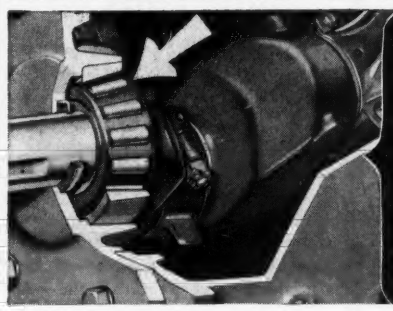


Why
WISCONSIN
HEAVY-DUTY *Air-Cooled* ENGINES
Run on Timken Tapered Roller Bearings

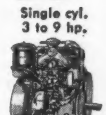
Ever since the first Wisconsin Air-Cooled Engine was built over 20 years ago, the crankshaft of every one of these fine engines has been supported by Tapered Roller Bearings at BOTH ENDS. Here's why:

1. Tapered Roller Bearings take up all *End Thrusts* and *Radial Loads* (impossible with other types of bearings). You can mount your drive directly on the extended crankshaft of any Wisconsin Engine without the need for an extra thrust bearing or outboard bearing.

2. Tapered Roller Bearings *resist wear* to a greater extent than other types of bearings not only because of the file-hard surfaces of Timken Tapered Bearings but also because these bearings are inherently SELF-CLEANING. Oil enters at the smaller end of tapered roller bearings and centrifugal force carries it out through the large end, thus preventing accumulations of dirt and sludge that is often present in the oil. (Tapered bearings cannot develop shaft-cutting abrasive surfaces.

3. Tapered Roller Bearings permit flexing of the crankshaft to a much greater degree than the longer, rigid plain bearings which cannot stand up under flexing conditions, resulting in wearing "bell-mouthed" or failing completely. We have yet to hear of a single case of Wisconsin Engine bearing failure.

The use of dependable Tapered Roller Bearings in ALL Wisconsin Engines from the smallest to the largest . . . 3 to 30 hp., single cylinder, 2-cylinder and 4-cylinder . . . is typical of the engineering diligence devoted to providing the user with "Most H.P. Hours of on-the-job service".



Single cyl. 3 to 9 hp.

2-cylinder 7 to13 hp.

V-type 4-cyl. 15-to 30 hp.

WISCONSIN MOTOR CORPORATION
World's Largest Builders of Heavy-Duty Air-Cooled Engines
MILWAUKEE 46, WISCONSIN

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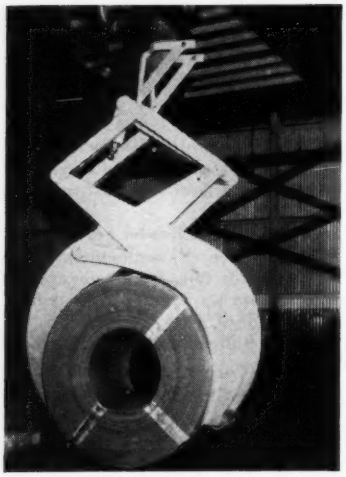
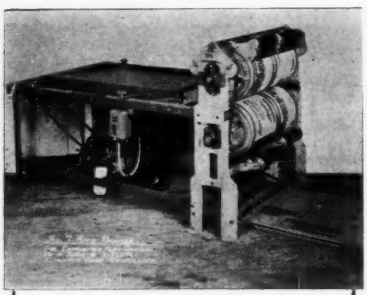
When Coils Are Stored End-to-End This pair of tongs picks up, transports and deposits coils of strip steel in the



Irvin Works of U. S. Steel's Carnegie-Illinois Steel Corp. The automatic tongs are designed to lift the desired coil directly up from the floor, without any distortion of its roundness, and without moving adjacent coils which would curtail the possibility of edge damage. Courtesy, Heppenstal Co.

Paper from Maine to Chicago. A barge, capable of transporting huge quantities of paper stock, has been completed at the Wilmington, Delaware shipyard of Dravo Corp. It will be used to move paper for LIFE magazine from the mill of the St. Regis Paper Co. at Bucksport, Maine, down the coast, up the Hudson River through the New York State Barge Canal and over the Great Lakes to Chicago. The rolls of paper weigh up to one and a half tons each and require the most careful handling, as the slightest damage—even to the edges—renders the paper unfit. Use of the barge will hold the number of handlings down to two —once when it is loaded in Bucksport, the other at unloading in Chicago. The barge's large capacity, permitting shipment of 2,000 tons at one time, is an added advantage. To protect the paper from weather damage in shipment, the barge is fitted with watertight, rolling hatch covers. The craft is a double skin type barge, carrying the 2,000 tons of paper stock in the main cargo holds.

Use the postcard bound into this issue for more information on Advertisements, New Products and Free Literature. Note the number to circle below each item.



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Pays for Itself Quickly

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- **MARKS** 2,400 hourly with address and other information.
- **FEEDS** containers to ptg. rollers.
- **REQUIRES** minimum of care and set-up. Built for years of trouble-free service.
- **MACHINES** for marking loaded containers also available.

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Industrial Marking Equipment Company

Dept. F-7, East 48th St., N. Y. 17, N. Y.

Conveyor Line Markers for coding, dating and product identification

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Yes, smart buyers insist on pallets giving long service with low maintenance cost . . . that's why there are more RAZORBACK Brand Pallets in service than any other! Our rounded corner feature is the most important improvement in years.

Arkansas Pallet Corp.

P. O. Box 794-A Phone 6474

PINE BLUFF, ARKANSAS

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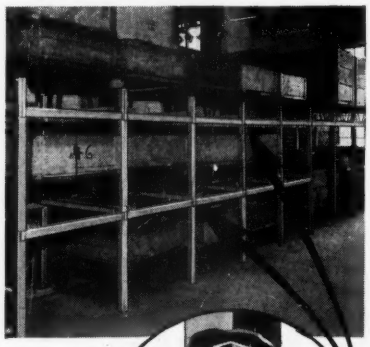
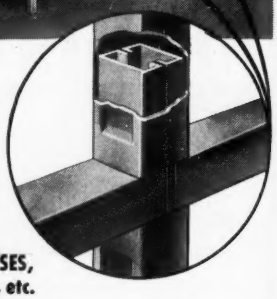
NEW Prefabricated PALLET, SKID RACKS

***NOW* Selective Storage**

All stock available from any level.





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  No bolting. No welding "C" channels on beds fit into upright tubing.
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  to meet changing conditions — just take apart by lifting beds from upright frames.
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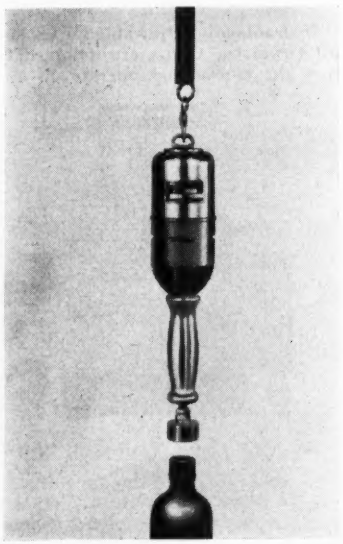
Circle No. 182 on Reader Service Card

New Products

(Continued from page 81)

Portable Screw Capper has been redesigned and is now equipped with a



more powerful motor available in all standard voltages and cycles. It is manufactured by Scientific Filter Co. Weight has been reduced to 4½ lb. for the complete unit thereby making it the lightest portable capper on the market. The capper can be suspended from the ceiling or any overhead point, and yet cover a wide area of operation because of the extra long suspension spring furnished as part of the unit. It is designed to tighten either metallic or molded caps at a speed of about 30 to 50 per minute. The caps are placed on the containers by hand and then the equipment used to tighten them to any required degree. There is a readily accessible tension adjustment device which can be pre-set to any desired degree of cap tightness according to the needs of the individual user.

Circle No. 121 on Reader Service Card

High-Speed Revolution Counter—Speeds to 4000 counts per minute are provided by a Revolution Counter, called the Silver King, developed by the Production Instrument Co. Built for industrial service and high speed operation, it has an extra large shaft with oversize bearings; all-steel housing with unbreakable plexiglass windows; and large, light-weight number wheels, with sharp easy-to-read figures. Standard models add one unit for each forward revolution of the shaft and subtract reverse revolutions. Also available to add 10 units for one shaft revolution and other ratios.

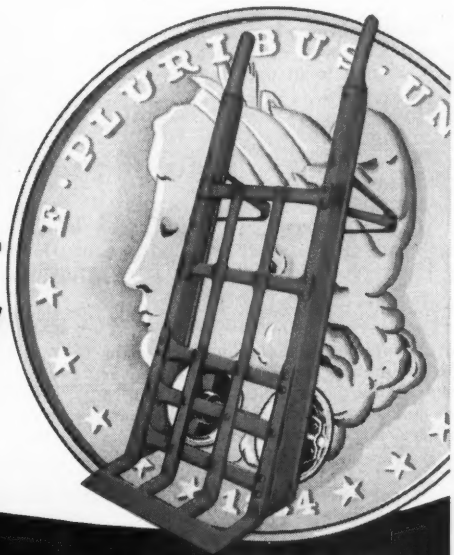
Models are available with top-coming or top-going shaft rotation; five or seven number wheels; reset knob or key; right, left or double shaft extension. Overall dimensions, 4-15/16″ long, 3-15/16″ wide, and 2⅜″ deep.

Circle No. 122 on Reader Service Card

Plasticized Floorings which are claimed to produce very hard and smooth surfaces have been placed on the market by the Monroe Co. They can be applied over wood or concrete floors without the use of metal lath or roughening concrete.

Circle No. 123 on Reader Service Card

More for your money!



AMERICAN PRESSED-STEEL HAND TRUCKS

New STEELITE® WHEELS—with sealed-in ball bearings that keep grease in, dirt out and eliminate axle wear—make American Hand Trucks a better buy than ever! **And most popular models now sell for less than before!**

The side rails and cross bars of these familiar red trucks are channel-section steel for hardest service. Pressed-steel bolted construction keeps maintenance costs down. Light weight and fingertip balance make them the easiest-handling trucks you can buy!

Choose American Hand Trucks from 50 types and sizes for most efficient material handling at lowest cost . . . stocked by distributors everywhere.

Send coupon for latest hand truck bulletin

The American Pulley Company 4290 Wissahickon Ave., Phila. 29, Pa.

Please mail free American Hand Truck Bulletin to:

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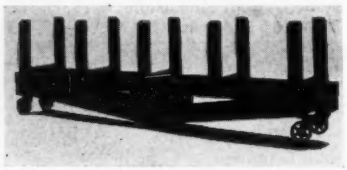
COMPANY_____

ADDRESS_____

CITY_____ STATE_____

Circle No. 183 on Reader Service Card for more information

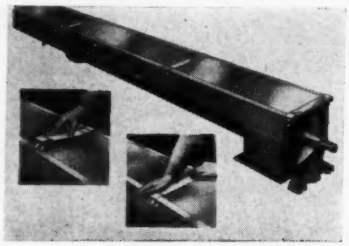
Heavy-duty Bar Trucks of steel channel and I-beam construction have been



developed by Palmer-Shile Co. They can be built to handle any load capacity. Units are tilt-type for handling of long stock, including tubing, and are of reinforced all-steel welded construction with four swivel casters at the ends.

Circle No. 124 on Reader Service Card

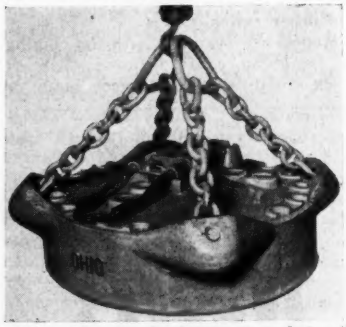
Screw Conveyor Box Cover Clamp—Screw Conveyor Corp. has perfected "U" Edging to fit over the cover and



box flange; also, a clamp which snaps on about every five ft. to hold the cover and edging down tight. This is said to form a dust-tight seal and eliminate time spent removing hundreds of nuts and bolts when conveyor boxes were cleaned or fumigated. The "U" Edging is made to fit all screw conveyor boxes and so are the clamps. No tools are needed. Spring steel is used for the clamps and they retain their resiliency indefinitely, according to the release.

Circle No. 125 on Reader Service Card

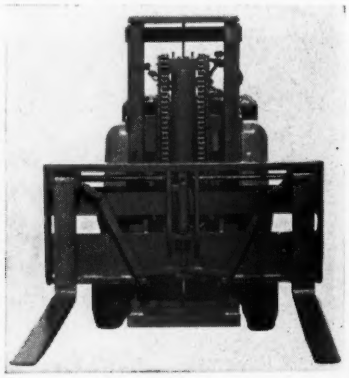
Lifting Magnet—A 55-in. "basket"-type lifting magnet, similar in general



construction to the larger 4 and 6-coil 65-in. basket magnets, has been announced by The Ohio Electric Mfg. Co. Developed for rough service in steel mills, foundries, scrap yards and fabricating plants where operating conditions are unusually severe, this model has an outer ring cast in one piece with four integral "ears" which project beyond the outer ring circumference and protect the magnet from damage. The magnet is suspended on four alloy steel chains attached to the ears. Lifting coils are wound from top grade wide copper strip for maximum lifting power. They are insulated with a heavy-duty asbestos tape that remains unaffected by heat or the hard knocks to which a magnet is subjected in skull cracker service or in handling heavy slabs.

Circle No. 126 on Reader Service Card

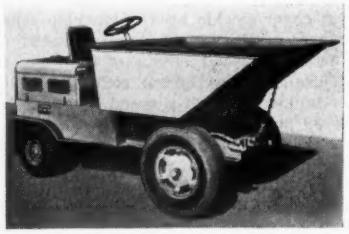
Hydraulically Adjustable Forks, built by Towmotor Corp., are designed for fork lift trucks that operate on close



time schedules and are required to handle pallets or materials of different widths. The operator is able to regulate the distance between the forks from a control lever without leaving his seat, and while the truck is in motion.

Circle No. 127 on Reader Service Card

Haulage Vehicles—Increased speed, reduced size and greater stability are three of the features of the redesigned



tructractor line of hauling vehicles developed by the Industrial Truck Division of the Clark Equipment Co. A new two-speed transmission is designed for 14 m.p.h. travel in high gear and eight m.p.h. in low gear, in both forward and reverse. A shortened wheelbase, reducing over-all length, has made possible a 12-in. decrease in the turning radius. Stability is said to have been increased through the new four-wheel construction and pivoted steering axle. The distributor, starter and generator are enclosed, and spark plugs have rubber covers. The frame is constructed with heavy steel channel and plate, cross braced, bolted and welded into an integral unit. All lubrication and maintenance points are readily accessible. The vehicles are available in two models, "Tip" and "Dump," each with a bulk-load capacity of up to 40 cu. ft., and weight-carrying capacity of 4000 lb.

Circle No. 128 on Reader Service Card

One Euclid 10-ton Overhead Crane
+ One Euclid 3-ton Semi-Gantry Crane
SOLVES A TOUGH PROBLEM
IN PARTS HANDLING
In a Modern Machinery Plant
Handling costs were sharply curtailed with considerable reduction in manhours per unit assembly.
Overhead crane moves material to be processed to fabricating bay where floor controlled semi-gantry crane is utilized in welding of sub-assemblies.
A Euclid proposal for your particular plant is available without obligation.
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LOCAL CHARGER SERVICE

ALL OVER THE MAP

. . . Yet at your door

Always there—if needed—Westinghouse Rectox Battery Charger Service. The scope is nationwide; yet service is local. 38 fully equipped Westinghouse Repair Plants serve the emergency needs of users and electric truck representatives. This means immediate service . . . fast answers to problems . . . no production delays.

Further, Rectox Battery Chargers save power. Reactors eliminate energy wasting resistors. Simple dials control operation from high to low range and no taps to adjust.

Rectox have proved their dependability over a 20-year period. Just plug them in and forget them. Complete facts are available from your local Westinghouse representative. Ask him for a copy of Descriptive Bulletins, DB-19-040 and 19-045, or write Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Penna. J-21569

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Rectox
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ALL INDUSTRIES

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● The Ironbound "safety-skid" with rounded corners, flush angles and countersunk bolts. This construction assures greater operator safety at a minimum of cost. Still the low-cost time proven method for handling of materials.

★ Skid with safety-type legs and reversible box top. Built so that additional skids and box tops can be tiered to any height. This is only one of the many specially designed skid and semi-live skid super structures — Ironbound engineered — for lower cost material handling.

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In this large plant heavy oil drums are handled more quickly, easily and economically because of the A-F plant-wide *Engineered* Conveying System. At this point is a scale for weighing the filled drums which move on the A-F Live Roller Conveyor line at right angles to A-F Gravity Roller Conveyors to storage—ready for moving at an instant's notice to shipping. How can an A-F Conveying System increase production for you? Write today!

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WASHING MACHINES FOR INDUSTRY

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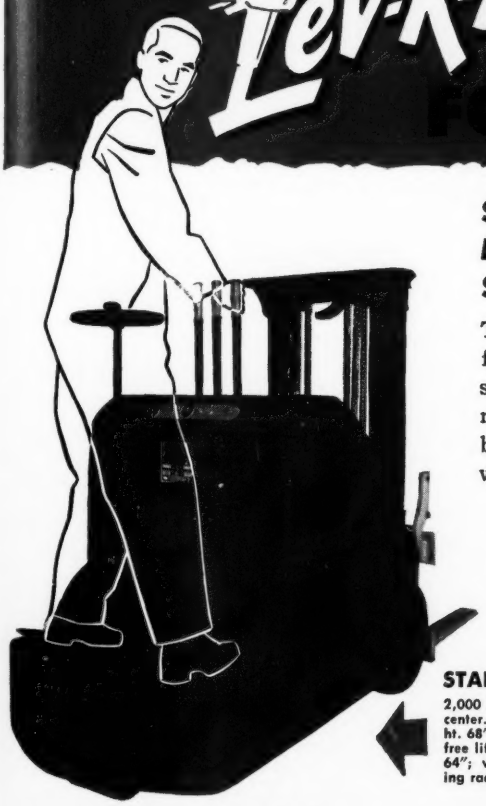
MOBILIFT presents 2 NEW Lev-R-Matic DRIVE FORK LIFT TRUCKS



Service-Tested Advantages, PLUS New Mechanical and Design Features Will Slash Your Materials Handling Costs

The new models "E" and "ER" have all the proven *Mobilift* features including roller chain lift that allows unobstructed view between uprights, *plus* mechanical improvements, new compactness and service accessibility never before possible in any lift truck. Save time and money with *Mobilift!*

STAND-UP MODEL "E"

2,000 lbs. capacity on 15" load center. Shown with 63" mast (lift ht. 68"; mast ht. extended, 94"; free lift, 37"). Length, less forks, 64"; width, overall, 33"; turning radius, outside, 57".

Lev-R-Matic Controls for Easiest, Speediest Operation

The secret of *Mobilift's* ease of operation and maneuverability is the exclusive Lev-R-Matic Controls—PUSH or PULL a single lever to go forward or back...a multiple disc clutch smoothly transmits positive power instantly.

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FORWARD & BACK

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2,000 lbs. capacity on 15" load center. Shown with 83" mast (lift ht. 108"; mast ht. extended, 134"; free lift, 57"). Length, less forks, 65"; width, overall, 33⅛"; turning radius, outside, 63".

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Circle No. 189 on Reader Service Card for more information

Production Efficiency has 2 faces!

● If greater profits are of interest to you—make this quick comparison.

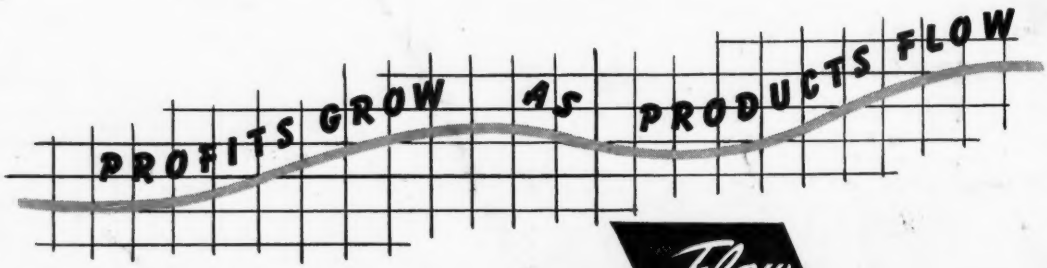
● In modern offices, salaried executives sit at their desks surrounded by intercommunication systems, switchboards and messengers to prevent a loss of their valuable time in getting and delivering information they require for the handling of business. *That* is efficiency!

● And down in the factory, high priced workers sit before the latest types of production machines. But what surrounds them in the way of equipment to bring materials to them, to load and unload, and to carry away finished goods for storage? Is *this* efficiency?

● As an executive interested in profits you should know the answers to these questions—Are your high salaried workers doing menial loading jobs because of lack of equipment? Are your expensive machines allowed to stand idle because antiquated materials handling methods can't keep up with them? Are your men wasting time doing moving and lifting and storing jobs when modern materials handling equipment could do the work in one-tenth the time, at one-tenth the cost?

● As an executive, your materials handling methods should be of vital interest because they afford you the opportunity to make as much as a 25% saving on your over-all operation—far more than you can secure through new and faster production equipment.

● Production efficiency has *two* faces—the "making," and the "taking" to-and-from. If you want a better-looking financial statement this year—start bringing your materials handling equipment to peak efficiency today!



Fourth of a series of messages to those responsible for American Industry by Flow Magazine.

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Cleveland 13, Ohio

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